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AUGUST 2022



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- Enforcing the single-use plastic ban
- 'Right to repair'
- India Rankings 2022 of higher educational institutes
- The Drugs, Medical Devices and Cosmetics Bill, 2022 15
- Lok Sabha passes the Indian Antarctic Bill, 2022
- India-EU: global dynamics
- State of Food Security and Nutrition in the World 2022 report
- Global Gender Gap Index 2022
- 12th Ministerial Conference (MC12) of WTO
- Energy Conservation (Amendment) Bill 2022
- Kerala Fibre Optic Network (KFON)
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POLITY & GOVERNANCE

A ROAD SAFETY QUARTET AND THE ROAD AHEAD



Why in news?

- ⇒ The United Nations is holding a high-level meeting on Global Road Safety to review the progress and challenges.

India & SDG 3.6:

- ⇒ In spite of several years of policymaking to improve road safety, India remains among the worst-performing countries in this area with a toll of 1,47,913 lives lost to road traffic accidents in 2017 as per Ministry of Road Transport and Highways statistics.
- ⇒ The National Crime Records Bureau (NCRB) figure for the same year is 1,50,093 road accident deaths.
- ⇒ The persistently high annual death toll brings into question the country's ability to meet Sustainable Development Goal (SDG) 3.6, which aims to halve the fatalities and injuries from road traffic accidents by 2030.

What are the new findings on road safety?

- ⇒ A new analytical series on road safety worldwide, proposes that India and other countries could cut accident-related deaths by 25 to 40% based on evidence that preventive interventions produce good outcomes when applied to four well-known risk factors – high speed, driving under the influence of alcohol, not using proper helmets, not wearing seatbelts and not using child restraints.
- ⇒ Globally, Low and Middle Income Countries (LMIC) bear the maximum burden of road fatalities and injuries, with high economic costs, an average of three to five per cent of GDP suffered by these countries in 2014.

Loopholes in implementation of Motor Vehicles Act 2019:

- ⇒ India amended its law on motor vehicles in 2019, but its implementation by State governments is not uniform or complete.
- ⇒ A National Road Safety Board was constituted under the Motor Vehicles Act, with advisory powers to reform safety.
- ⇒ The focus of State governments, however, remains conventional, with an emphasis on user behaviour (drivers and other road users), education and uneven enforcement.
- ⇒ Low emphasis is placed on structural change such as raising engineering standards for roads, signages, signals, training for scientific accident investigation, raising policing skills and fixing responsibility on government departments for design, creation and maintenance of road infrastructure.

How can four factors improve safety outcomes?

- ⇒ The authors used common predictors for individual countries, such as GDP per capita, population density, and governmental effectiveness measured through the Worldwide Governance Indicators, and built a statistical estimate of how interventions on the identified risk factors would influence injuries and death.
- ⇒ Using the Global Burden of Disease data, a statistical model was constructed to estimate the number of lives that could be saved with interventions in the respective areas for each country.

Suggestions for India:

- ⇒ An average of 20,554 lives could have been saved in India with a reduction in speeds, 5,683 with helmet interventions and 3,204 with seatbelts.
- ⇒ The savings for curbs on driving under the influence of alcohol were not quantified because the country does not report the percentage of such fatalities.

Trauma care facilities:

- ⇒ In addition, the study also calculates that 17% of road traffic injury-related deaths in LMICs could be avoided if trauma care facilities improved. This is significant as several accidents take place in rural areas on highways, and victims are taken to poorly-equipped district hospitals or medical college hospitals.
- ⇒ While positive user behaviour could save thousands of lives, the structural problems linked to unplanned motorisation and urbanisation remain.

Better engineering and enforcement:

- In India, speedy highway construction without reconciling fast and slow-moving traffic, presence of ramshackle vehicles, rampant wrong-side driving, absence of adequate police forces to monitor vehicles and curb drunk driving, and poor trauma care in non-urban centres contribute to high death and disability rates.
- According to the Transport Ministry, more than 65% of those killed in road accidents in 2019 were in rural areas. Yet, the substantial death toll in densely populated urban centres indicates that better engineering and enforcement can easily cut fatalities in the current decade, in the run up to the SDG goal year of 2030.
- This would be in consonance with the World Health Organization's (WHO) decade of action on road safety, recognising it as a major public health issue, launched in 2021.

What can be done to cut death and injury rates?

- The ambitious amendments to the Motor Vehicles Act in 2019 (MV Act) have not yielded significant results, although the restrictions on vehicular movement for COVID-19 temporarily slowed the rising graph of fatalities and injuries.

Sundar Committee:

- Major interventions in India, first suggested by the Sundar Committee (2007) and ordered by the Supreme Court in *S. Rajasekaran vs Union of India* have not made a dent in the problem. The measures include setting up of an apex national body for road safety, and fixing decentralised responsibility at the district level.
- The Sundar Committee pointed out that India lacked a technically competent investigation arm that could determine the cause of accidents; the National Road Safety Board Rules, 2021, provide for the formation of technical working groups covering, among other things, crash investigation and forensics.
- There is little clarity on whether the States have formed such units to aid traffic investigation, or whether the insurance industry has pressed for these to accurately determine fault. In the absence of scientific investigation, perceptions usually guide the fixing of liability.
- The MV Act stipulates only a fine up to one lakh for failure to follow norms and stipulations by the designated authority, contractor, consultant or concessionaire, leading to death or disability, and there is little evidence that even this has been enforced after a public inquiry.

Way Forward:

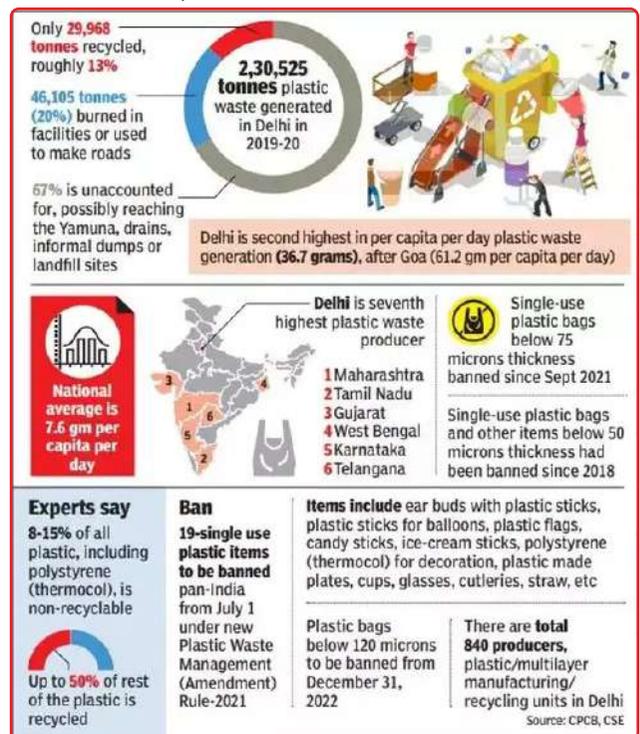
- The legislation without enforcement ends in failure. Moreover, while proven interventions are proposed by WHO, absorptive capacities vary in LMICs.

- This is evident even in fast-growing India, since no single department bears responsibility to make roads safe.
- In the short term, slowing down traffic, particularly near habitations, segregating slower vehicles, enforcing seat belt and helmet use and cracking down on drunken drivers could produce measurable gains.

ENFORCING THE SINGLE-USE PLASTIC BAN

Why in news?

- A ban on the use of single-use plastics that was notified by the Union Environment Ministry on August 2021 came into effect on July 1, 2022.
- The notification said national and State-level control rooms would be set up to check illegal manufacture, import, stocking, distribution, sale and use of banned single use plastic items.
- The Plastic Waste Management Amendment Rules, 2021, will also prohibit manufacture, import, stocking, distribution, sale and use of plastic carry bags having thickness less than 120 microns with effect from December 31, 2022.



What is single-use plastic?

- The Centre defines it as an object made of plastic that is intended to be used "only once" before being disposed off or recycled.
- For the purposes of the ban, there is a list of 21 items that come under the definition of single-use plastic including ear buds with plastic sticks, plastic sticks for balloons, plastic flags, candy sticks, ice-cream

sticks, thermocol for decoration, plates, cups, glasses, cutlery such as forks, spoons, knives, straw, trays, wrapping or packing films around sweet boxes, invitation cards, and cigarette packets, plastic or PVC banners less than 100 microns, stirrers.

- These objects were listed by the Environment Ministry in August when it notified the Plastic Waste Management Amendment Rules, 2021.
- Plastic packaging waste, a major contributor to the much larger problem of plastic waste pollution, isn't yet covered under the phase-out of single-use plastic items.
- Mineral water bottles or plastic bottles of aerated drinks are unaffected by the ban, though, in popular imagination, they are representative of 'plastic pollution.'

How will the ban be implemented?

- So far 32 States/UTs have reportedly constituted a dedicated Task Force to eliminate the use of single-use plastics. Of these 14 states/UTs and 12 Central Ministries, as of March, had developed action plans describing how they would be enforcing this.
- A few States, for example Maharashtra, already have legislation banning the manufacture and storage of such plastic. But implementing it wasn't always successful as there was regular supply from States where such bans were not in force. An all-India ban, it's hoped, would make enforcement more effective.
- According to the Environment Protection (EP) Act, violating the ban could invite "punitive action". Manufacturers and distributors of single-use plastic goods were directed to have zero inventory by June 30.
- The EP Act says that violating the ban could invite a five-year imprisonment and a fine of upto ₹1 lakh, or both. If the violations are repeated, it could mean additional fines up to ₹5000 for each day. There are different penalties for companies, organisations, and government departments under the EP Act.

What is the history of the single use plastic ban in India?

- A draft outlining the manner in which the ban was to be implemented was issued in March 2021 and involved amending the Plastic Waste Management Rules, 2016.
- Before the amendments came into force, the Plastic Waste Management Rules only prohibited the manufacture, import, stocking, distribution, sale and use of carry bags and plastic sheets less than 50 microns in thickness in the country.
- There is a ban on sachets using plastic material used for storing, packing or selling gutkha, tobacco and pan masala.
- Since October 2021, there is a ban on the manufacture, import, stocking, distribution, sale and use of carry

bags made of virgin or recycled plastic less than 75 microns as opposed to 50 microns under the earlier version of the rules.

- At the 4th United Nations Environment Assembly in 2019, India piloted a resolution on addressing single-use plastic products pollution.

Is there popular support for the ban?

- The All India Plastic Manufacturers Association has said that the ban would shutter 88,000 units in the plastic manufacturing business. These employ close to a million people and contribute to exports worth ₹25,000 crore.
- Fast Moving Consumer Goods companies (FMCG) would be severely affected by the ban due to their dependence on plastic straws, plates.
- Their replacements are available but cost much more than their plastic alternatives. There is also limited capacity in India to provide biodegradable replacements.

What is the environmental damage from single-use plastic?

- Unlike thicker and denser plastic material, single-use plastic objects being light and flexible are less amenable to being recycled. While 99% of plastic is recycled, they constitute heavier plastics that are likely to be collected by ragpickers and plastic waste recyclers.
- Single use plastics do not provide an incentive enough for the effort needed to collect them and hence they lie around, leach their toxins into the soil and cause environmental damage in both land and sea.

QUESTIONS OVER FREE SPEECH



Context:

- Twitter India's decision to petition the Karnataka High Court against the Centre's order to block tweets and even handles, under Section 69 of the Information Technology Act 2000 will answer quite a few vexed questions.

Claims by Twitter:

- Twitter, which has approximately 48 million users in India, alleged that the government had abused its power by ordering it to arbitrarily and

disproportionately remove several tweets from its platform.

- The company also alleged the government threatened to open criminal proceedings against its chief compliance officer in India if the company didn't comply with orders.

Valid concerns:

- The point on which Twitter and a few other social media platforms, which are categorised as intermediaries, differ with the government is that no notice is given before directions are passed regarding takedown of tweets or any content or blocking of accounts.
- This matter can only be decided by the court as the Information Technology law clearly empowers the government to make rules and regulations from time to time.

New rules for intermediaries in 2021:

- As the IT law was passed by Parliament with this provision way back in 2000, the framing of subsequent rules are in the nature of secondary legislation and do not require approval of Parliament again.
- India's new social media rules rolled out on February 25, 2021, to make the tech giants more responsible and accountable for the content they allow their users to upload on their platforms.
- The Centre introduced The Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 to regulate the content of the Over-the-Top platforms and other top social media sites like Facebook, Whatsapp, YouTube, Instagram and Twitter.
- These rules require intermediaries to appoint a set of regulatory officials for compliance of the laws and coordination with the government.
- Further, it has put in place a system to look into users' grievance. While there is nothing wrong with these provisions, the problem begins when failure to implement the provisions of these laws or any direction with regard to takedown of content could lead to the loss of intermediary status that confers legal protection, as such platforms host third-party content.

Harsh penalties:

- The new rules, notified in 2021, introduced a clause that loss of intermediary status or failure to comply with government's directions make intermediaries liable to face criminal proceedings, and executives can even face imprisonment of up to seven years.
- This provision was not there earlier and is seen as draconian, something like the Foreign Exchange Regulation Act of yesteryears.
- Critics see such rules as the government's way of preventing criticism on social media platforms as intermediaries can be asked to remove any content

which is critical of the government.

Freedom of speech:

- Another proposal to make the central government (instead of, ideally, an independent judicial or a regulatory body) the arbiter of permissible speech on the internet is also quite unfair.
- While Twitter or any other entity just can't challenge the government's sovereign powers to legislate, one has every right to differ with the law.

Approaching Courts:

- The courts are the appropriate forum to decide whether the rules framed by the government are in consonance with the IT Act as well as the constitutional provisions.
- Prior to Twitter, WhatsApp and Google have already moved the courts on certain aspects of the rule. While WhatsApp has challenged the provision that requires it to disclose the originator of any message seen as mischievous by the government, as it amounts to breaking its encryption that provides privacy to users, Google has contended that it cannot be categorised as a social media intermediary as it is just an aggregator.

Have platforms complied with IT Rules?

- None of the social media platforms, except the India's Twitter rival Koo, has so far fully complied with the rules.
- This new rule will harm the existing users as according to this rule, social media sites will have to trace all the messages including the private conversations of the users, which can amount to a violation of privacy.
- Facebook in 2021 announced that it has been aiming to comply with the rules and is holding further discussions.
- Twitter issued a statement, raising safety concerns of its employees working in India and also the potential threat to the freedom of speech and expression of its users and stated they want to have an open discussion with the authorities.

Conclusion:

- Several public interest litigations have also been filed in various high courts against the rules; these have been clubbed and are before the Supreme Court.
- The petitions of WhatsApp, Google, and Twitter should also be clubbed and, ideally, the SC should expeditiously decide whether the IT Rules made in 2021 are constitutionally sound or not.
- That's the right way to go, instead of painting these legal challenges as defiance of the government of India by Silicon Valley platforms.

MHA SETS UP PANEL FOR DELIMITATION OF MUNICIPAL WARDS IN DELHI

Why in news?

- The Union Ministry of Home Affairs (MHA) has set up

a three-member commission for carrying out a fresh delimitation exercise of the municipal wards in Delhi.

- The exercise will pave the way for the civic polls in Delhi, which would be the first since the recent reunification of the city's three corporations.

Delimitation Commission:

- Ministry of Home Affairs, Government of India, by exercising its powers under sections 3, 3A and 5 of the DMC Act, 1957, has constituted a delimitation commission to assist central government in delimitation of wards and carrying out other functions related to it.
- The commission will present its report within four months of its formation.

Reunified MCD:

- The reunified Municipal Corporation of Delhi (MCD) formally came into existence on May 22 with IAS officers Ashwani Kumar and Gyanesh Bharti assuming charge as its special officer and commissioner respectively.
- The erstwhile MCD, established in 1958, was trifurcated in 2012 during Sheila Dikshit's tenure as the chief minister. It was recently reunified by merging the three civic bodies -- North, South and East Delhi municipal corporations or NDMC, SDMC and EDMC.
- Parliament passed the Delhi Municipal Corporation (Amendment) Bill, 2022 on April 5 to unify the three civic bodies in the national capital, with the Rajya Sabha giving its nod through a voice vote after negating all the amendments sought by the opposition.

Why delimitation commission has been constituted?

- Delhi presently has 70 Assembly segments. The three erstwhile corporations comprised 272 wards -- 104 each in the North and South corporations and 64 in the East Corporation.
- Since the bill talks about capping the number of wards at 250, the Centre formed a delimitation commission after it is passed by both houses of Parliament.
- The delimitation commission will then start the exercise to reorganise the municipal wards in accordance with the population of the respective Assembly segments.

Way Forward:

- The unification of the municipal corporations will ensure synergised and strategic planning and optimal utilisation of resources.

THE NEW GUIDELINES TO PREVENT UNFAIR TRADE PRACTICES

Why in news?

- Recently, the Central Consumer Protection Authority (CCPA) announced five guidelines to prevent unfair trade practices and to protect consumer interests

regarding the levy of service charges in hotels and restaurants.



- The guidelines are in addition to the Centre's 2017 guidelines which prohibit the levy of service charges on consumers by hotels and restaurants, and terms the charging for anything other than "the prices displayed on the menu card along with the applicable taxes" without "express consent" of the customer as "unfair trade practices".

What are the powers of the CCPA?

- The CCPA has been established to regulate matters related to the violation of the rights of consumers. Under the Consumer Protection Act (CPA), 2019, the authority was established to regulate violations of consumer rights, unfair trade practices, and false or misleading advertisements that are prejudicial to the interest of the public.
- The CCPA has authority under section 18 of the CPA, 2019 to protect, promote and most importantly enforce the rights of the consumers and prevent violation of their rights under the Act.
- It also seeks to ensure that no person engages in unfair trade practices. It is also empowered to issue guidelines to enforce the rights of the consumers laid down in the Act.
- The authority has issued a letter to the Chief Secretaries of the States on service charge imposition, asking them to ensure compliance with the new guidelines on service charges.
- It has also been said that the State should instruct all the district magistrates to take appropriate action against violations of the guideline.

What is a service charge?

- A service charge is a tip or a direct transaction between the customer and the restaurant staff, specifically the wait staff.
- It is a fee collected to pay for services associated with the purchase of a primary product or service.
- It is collected by hospitality sectors and food and beverage industries as a fee for serving customers.

What do the new guidelines specify?

- As per the new guidelines, hotels or restaurants are prohibited from levying extra charges automatically or by default in the bill or by any other name.

- Also, they are not allowed to force service charges, and must clearly inform the consumers that service charges are voluntary, optional, and at their discretion.
- Most importantly, hotels and restaurants are no longer allowed to restrict entry or services based on the collection of service charges. Furthermore, hotels cannot add service charges to their bills and charge GST on the total.
- It is entirely up to the consumer to decide whether or not to tip. If a consumer enters a restaurant or orders something, the restaurant policy cannot require them to tip. Therefore, consumers cannot be forced to pay a service charge without having the choice to decide whether they want to do so.

Why were new guidelines issued?

- The CCPA has taken cognisance of various grievances that were registered on the National Consumer Helpline (NCH) related to the unnecessary levying of service charges in the bill. Usually, this charge is levied in addition to the total price of the food items mentioned on the menu and applicable taxes, often in the guise of some other fee.
- The said guidelines now consider charging a customer other than the price of food items displayed on the menu along with applicable taxes, as an 'unfair trade practice' under the CPA.
- In general, the price of any product covers both the cost of the product and the cost of the service. This implies that the price of food and beverages served in the hotels and restaurants includes the price of the 'service'.
- There is no restriction on hotels or restaurants to set the prices at which they want to offer food or beverages to consumers. Placing an order involves consent to pay only the prices of food items displayed on the menu along with applicable taxes. Charging anything other than the said amount would amount to 'unfair trade practice' under the Act.

What are the redressal mechanisms?

- If any consumer finds that a hotel or restaurant is levying a service charge in violation of these guidelines, they may request the concerned hotel or restaurant to remove the service charge from the bill or may lodge a complaint on the NCH, which works as an alternate dispute redressal mechanism at the pre-litigation level by calling 1915 or through the NCH mobile app.
- A complaint may also be filed against unfair trade practice with the Consumer Commission electronically for its speedy and effective redressal.
- As a result of these new guidelines, consumers will no longer be subject to involuntary payments under the heading of 'service tax'. However, it will be interesting to observe the effective compliance of these guidelines by restaurants since levying a service charge has become an 'accepted trade practice' in India.

ASSESSING JUVENILITY A 'DELICATE TASK': SC

Why in news?

- Recently, the Supreme Court held in a judgment held that the "delicate task" of deciding whether juveniles aged between 16 and 18, accused of heinous offences such as murder, can be tried like adults should be based on "meticulous psychological investigation" rather than be left to the discretion and perfunctory "wisdom" of juvenile justice boards and children's courts across the country.



What was the case before the SC?

- The apex court's judgment came while dismissing the appeals filed by the CBI and the relative of a Class two child who was allegedly found murdered in the washroom of his Gurugram school in 2017.
- The suspect, a Class nine student of the same school, underwent a preliminary assessment in which it was decided that he should be tried as an adult.
- The Bench found that his assessment was limited to an IQ test.
- The apex court upheld the High Court's decision to reverse the assessment and refer the case back to the Juvenile Justice Board for a fresh 'preliminary assessment' of the now 21-year-old.

What is 'Preliminary assessment' under JJ Act of 2015?

- Section 15 of the Juvenile Justice (Care and Protection of Children) Act of 2015 requires a "preliminary assessment" to be done of the mental and physical capacity of juveniles, aged between 16 and 18, who are involved in serious crimes.
- The assessment is meant to gauge a child's ability to understand the consequences of the offence and the circumstances in which he or she allegedly committed the offence.
- If the Juvenile Justice Board is of the opinion that the juvenile should not be treated as an adult, it would not pass on the case to the children's court and hear the case itself. In that case, if the child is found guilty, he would be sent to juvenile care for three years.
- On the other hand, if the Board decides to refer the case to the children's court for trial as an adult, the juvenile, if guilty, would even face life imprisonment.

Concerns raised by Supreme Court:

- The report of the preliminary assessment decides the germane question of transferring the case of a child between 16 and 18 years of age to the children's court.
- This evaluation of 'mental capacity and ability to understand the consequences' of the child in conflict with law can, in no way, be relegated to the status of a perfunctory and a routine task.
- The process of taking a decision on which the fate of the child in conflict with law precariously rests, should not be taken without conducting a meticulous psychological evaluation.
- The court discovered that there were neither guidelines nor a specific framework in place for conduct of the preliminary assessment.

Suggestions by the SC:

- The Supreme Court left it open for the Centre and the National Commission for Protection of Child Rights and the State Commission for Protection of Child Rights to consider issuing guidelines or directions in this regard.
- It said the Board which conducts the assessment of the child should have at least one child psychologist.
- It should further take the assistance of experienced psychologists or psychosocial workers.

POLITICAL PARTY'S SYMBOL BY ELECTION COMMISSION



Why in news?

- Recently, the Uddhav Thackeray-led Shiv Sena approached the Election Commission of India, requesting it to hear its side before deciding claims to the party's bow-arrow symbol.

Pre-emptive move:

- It was a pre-emptive move, since Eknath Shinde, who has claimed to be the "original" Shiv Sena on the basis of the support of more than two-thirds of the party's legislators in the Maharashtra Assembly, has not officially written to the EC yet to stake claim to the party symbol.
- If and when the Shinde camp approaches the EC, the latter will in all likelihood freeze the symbol so that neither of the two sides is able to use it until a final decision is made.

What are the EC's powers in such a dispute?

- On the question of a split in a political party outside the legislature, Para 15 of the Symbols Order, 1968, states: "When the [Election] Commission is satisfied... that there are rival sections or groups of a recognised political party each of whom claims to be that party the Commission may, after taking into account all the available facts and circumstances of the case and hearing [their] representatives... and other persons as desire to be heard decide that one such rival section or group or none of such rival sections or groups is that recognised political party and the decision of the Commission shall be binding on all such rival sections or groups."
- This applies to disputes in recognised national and state parties.
- For splits in registered but unrecognised parties, the EC usually advises the warring factions to resolve their differences internally or to approach the court.

And how did the EC deal with such matters before the Symbols Order came into effect?

- Before 1968, the EC issued notifications and executive orders under the Conduct of Election Rules, 1961.
- The most high-profile split of a party before 1968 was that of the Communist Party of India in 1964. A breakaway group approached the EC in December 1964, urging it to recognise it as CPI(Marxist).
- They provided a list of MPs and MLAs of Andhra Pradesh, Kerala and West Bengal who supported them. The ECI recognised the faction as CPI(M) after it found that the votes secured by the MPs and MLAs supporting the breakaway group added up to more than 4% in the 3 states.

What was the first case decided under Para 15 of the 1968 Order?

- It was the first split in the Indian National Congress in 1969. Then Prime Minister Indira Gandhi's tensions with a rival group within the party came to a head with the death of President Dr Zakir Hussain on May 3, 1969.
- The Congress old guard, led by K Kamaraj, Neelam Sanjiva Reddy, S Nijalingappa and Atulya Ghosh – known as the 'Syndicate' nominated Reddy for the post.
- Indira Gandhi encouraged Vice-President V V Giri to contest as an Independent, and called for a "conscience vote" in defiance of the whip issued by party president Nijalingappa.
- After Giri won, Indira was expelled from the Congress, and the party split into the "old" Congress(O) led by Nijalingappa and the "new" Congress (R) led by Indira Gandhi.
- The "old" Congress retained the party symbol of a pair of bullocks carrying a yoke; the breakaway faction was given the symbol of a cow with a calf.

Is there a way other than the test of majority to resolve a dispute over election symbols?

- ⇒ In almost all disputes decided by the EC so far, a clear majority of party delegates/office bearers, MPs and MLAs have supported one of the factions.
- ⇒ Whenever the EC could not test the strength of rival groups based on support within the party organisation (because of disputes regarding the list of office-bearers), it fell back on testing the majority only among elected MPs and MLAs.
- ⇒ Only in the case of the split in the AIADMK in 1987, which happened after the death of M G Ramachandran, was the EC faced with a peculiar situation. The group led by MGR's wife Janaki had the support of the majority of MPs and MLAs, while J Jayalalitha was supported by a substantial majority in the party organisation.
- ⇒ But before the EC was forced to make a decision on which group should retain the party symbol, a rapprochement was reached.

What happens to the group that doesn't get the parent party's symbol?

- ⇒ In the case of the first Congress split, the EC recognised both the Congress(O) and the breakaway faction whose president was Jagjivan Ram. The Congress(O) had a substantial presence in some states and satisfied the criteria fixed for recognition of parties under Paras 6 and 7 of the Symbols Order.
- ⇒ However, things changed when the Election Commission dealt with the cases of splits in the Indian National Congress and Janata Dal. The disputes led to the creation of Himachal Vikas Congress, Manipur State Congress Party, West Bengal Trinamool Congress, Rashtriya Janata Dal, Biju Janata Dal, etc. The EC then did not recognise the new parties as either state or national parties.
- ⇒ It felt that merely having MPs and MLAs is not enough, as the elected representatives had fought and won polls on tickets of their parent (undivided) parties.
- ⇒ The EC introduced a new rule under which the splinter group of the party, other than the group that got the party symbol had to register itself as a separate party, and could lay claim to national or state party status only on the basis of its performance in state or central elections after registration.

'RIGHT TO REPAIR'

Why in news?

- ⇒ Recently, the Department of Consumer Affairs has set up a committee chaired by Additional Secretary Nidhi Khare to develop comprehensive framework on 'Right to repair'.

What is 'Right to repair'?

- ⇒ The manufacturers in general retain proprietary control over the design of the products and their spare parts.



- ⇒ Warranty cards of several products such as TVs and cars state that getting them repaired from an outfit not recognised by the makers would lead to customers losing their warranty.
- ⇒ As per the Centre, the rationale behind the 'Right to repair' is that when customers buy a product, it is inherent that they must own it completely "for which the consumers should be able to repair and modify the product with ease and at reasonable cost, without being captive to the whims of manufacturers for repairs."
- ⇒ The government plans to make it mandatory for makers of cars, mobiles and other consumer goods monopolising repair and spare parts market to share with customers product details necessary for repair by self or by self or third parties.

Sustainable consumption:

- ⇒ It will be mandatory for manufacturers to give the detailed drawings of the products at the time of sale.
- ⇒ Repair is a critical function of all forms of re-use and even for the sustainable life of the products, the ministry said.
- ⇒ A product that cannot be repaired or falls under planned obsolescence like designing a product with an artificially limited useful life, not only becomes e-waste but also forces the consumers to buy new products for want of any repair to reuse it.
- ⇒ Thus, restricting the repair of products forces consumers to deliberately make a choice to purchase a new model of that product.

What is the aim of 'Right to repair'?

- ⇒ To empower consumers, harmonise trade between the original equipment manufacturers and the third-party buyers and sellers, and reduce e-waste.
- ⇒ The move comes in a bid to put a greater emphasis on Lifestyle for the Environment (LiFE) movement through sustainable consumption which was launched by Prime Minister Narendra Modi.

Key sectors:

- ⇒ The committee held its first meeting in which key sectors for 'Right to repair' including farming

equipment, mobile phones/ tablets, consumer durables and automobiles/automobile equipment were identified.

- Further, the parts and tools to service devices, including diagnostic tools should be made available to third parties, including individuals so that the product can be repaired in case of minor glitches.
- Once rolled out in India, the framework will become a 'game-changer' for the sustainability of the products and serve as a catalyst for employment generation through Aatmanirbhar Bharat by allowing third-party repairs.

'Right to repair' abroad:

- The right to repair has been recognised in many countries across the globe, including the USA, UK and European Union.
- New York state recently passed the Fair Repair Act, which requires manufacturers to supply repair information, tools, and parts to independent repair shops and not just their own stores or partners.
- The Act gives consumers with the right to repair and refurbish their purchased goods as well as allows independent repair shops to access relevant tools and repair manuals and compete with manufacturers.
- Meanwhile, the UK has a law that mandates all electronic appliance manufacturers must provide consumers with spare parts for repair either by themselves or at local repair shops.
- Australia has free "repair cafes", where technicians volunteer to share skills for free, while the European Union has made it legally mandatory for manufacturers to provide parts of products to professional repairmen for a period of 10 years.

INDIA RANKINGS 2022 OF HIGHER EDUCATIONAL INSTITUTES

Why in news?

- Recently, the Union Minister Education, Skill Development and Entrepreneurship, released the India Rankings 2022.

Key Highlights of India Rankings 2022:

- Indian Institute of Technology Madras retains its 1st position in Overall Category for fourth consecutive year and in Engineering for seventh consecutive year.
- Top 100 in Overall category consists of 40 CFTIs and CFU (including 38 technical institutions), 26 state universities, 24 deemed universities, 6 private universities, 7 medical institutions and 3 management institutions.
- Indian Institute of Science, Bengaluru tops the Universities Category for seventh consecutive year. It stood first in Research Institutions Category for second consecutive year.
- IIM Ahmedabad tops in Management subject retaining its first position for third consecutive year.

Report card

A look at the top 10 educational institutions in India, according to Ministry of Education's National Institutional Ranking Framework 2022



| Rank | Institution | Score |
|------|--|-------|
| 1 | Indian Institute of Technology-Madras | 87.59 |
| 2 | Indian Institute of Science, Bengaluru | 83.57 |
| 3 | Indian Institute of Technology-Bombay | 82.35 |
| 4 | Indian Institute of Technology-Delhi | 82.22 |
| 5 | Indian Institute of Technology-Kanpur | 77.83 |
| 6 | Indian Institute of Technology-Kharagpur | 75.94 |
| 7 | Indian Institute of Technology-Roorkee | 71.48 |
| 8 | Indian Institute of Technology-Guwahati | 69.75 |
| 9 | All India Institute of Medical Sciences, Delhi | 69.57 |
| 10 | Jawaharlal Nehru University, Delhi | 67.25 |

- All India Institute of Medical Sciences (AIIMS), New Delhi occupies the top slot in Medical for the fifth consecutive year. Moreover, AIIMS is ranked at 9th position in Overall category for the first time.
- JamiaHamdard tops the ranking in Pharmacy for fourth consecutive year.
- Miranda House retains the 1st position amongst Colleges for the sixth consecutive year.
- IIT Roorkee stands at 1st position in Architecture subject for second consecutive year.
- National Law School of India University, Bengaluru retains its first position in Law for the fifth consecutive year.
- Colleges in Delhi dominate ranking of colleges with five colleges out of first 10 colleges from Delhi.
- The Saveetha Institute of Medical and Technical Sciences takes the top slot for the first time in Dental Subject displacing Manipal College of Dental Sciences, Manipal.

Five Broad Categories of Parameters and Weightage:

- The National Institutional Ranking Framework (NIRF), launched in November 2015 by the Ministry of Education, was used for this edition as well as for the past six editions of India Rankings released for the years 2016 to 2022.
- Each of these five parameters have 2 to 5 sub-parameters. A total number of 18 – 21 sub-parameters are used for ranking of HEIs in different categories and subject domains.
- Institutions are ranked based on total sum of marks assigned for each of these five broad groups of parameters.
- In addition to parameters used for Overall category, the following two additional sub-parameters were

included in methodology developed afresh for ranking institutions under "Research Institutions": i) Research Papers published in journals covered in the First Quartile of Journal Citation Report (JCRQ1); and ii) H Index.

| Sl. No. | Parameter | Marks | Weightage |
|---------|------------------------------------|-------|-----------|
| 1 | Teaching, Learning & Resources | 100 | 0.30 |
| 2 | Research and Professional Practice | 100 | 0.30 |
| 3 | Graduation Outcomes | 100 | 0.20 |
| 4 | Outreach and Inclusivity | 100 | 0.10 |
| 5 | Perception | 100 | 0.10 |

THE DRUGS, MEDICAL DEVICES AND COSMETICS BILL, 2022



Govt introduces draft of New Drugs, Medical Devices and Cosmetics Bill, 2022, invites comments

Context:

- The Union Health Ministry recently published a new draft Bill to replace the antiquated Drugs and Cosmetics Act, 1940.

Issues:

- To begin with, although the Ministry has described it as being consistent with the government's move to review obsolete pre-Independence legislation, most of it is a copy of the old law.
- There is nothing new in this Bill regarding drug regulation. And the Bill does nothing to address burning issues thrown up over the last decade since the Ranbaxy scandal.

Old Regulatory theory:

- The original Act was enacted when the Indian pharmaceutical industry was in its infancy. At the time, the guiding theory of this law was based on testing manufactured drugs purchased by drug inspectors from the open market.
- If a drug failed quality testing, the manufacturer could be jailed. This was not the most efficient system of

regulation because it depended entirely on luck or fate – only if a drug inspector picked a certain drug on a certain day and it failed testing would the manufacturer face legal action.

- Much of the world has shifted to a more rigorous system of regulation centered around the compliance of manufacturing units with good manufacturing practices (GMPs). In theory, a drug manufactured in compliance with GMPs is subject to so many checks that it is unlikely that it would fail quality tests once shipped to the market.

Good Manufacturing Practices (GMPs):

- In 1988, India incorporated a system of GMPs via rules framed by the government rather than Parliament. But even then, the government did not make GMPs the centrepiece of its regulatory strategy.
- In the U.S., the regulator's focus is in ensuring that manufacturing units comply with GMPs. American law presumes that any drug that is manufactured in a facility that fails to comply with GMPs is 'adulterated'. Given this focus on GMP compliance, U.S. law mandates the publication of reports of inspections conducted by its drug inspectors.
- Indian law, on the other hand, contains no such criminal penalties for pharmaceutical companies failing to comply with GMPs.
- At the most, licences may be cancelled, but since inspection reports are never published, citizens have no idea if drug inspectors are conducting GMP compliance-related inspections.
- There is ample evidence to suggest that such inspections are not carried out. The Bill does nothing to change this system. In fact, it does not mention the phrase GMP even once.

Uneven enforcement:

- The one issue that has come up in every review of the drug regulatory system since 1947 has been the uneven enforcement of the Drugs and Cosmetics Act across India.
- This is because, unlike the U.S. which has a single federal agency tasked with enforcing drug regulation across the country, India has 37 agencies for the same job: one in each State and Union Territory along with the Central Drugs Standard Control Organisation (CDSCO), which is under the control of the Union Health Ministry.
- State drug controllers are expected to license drug manufacturing and also conduct enforcement actions such as sampling, testing and prosecution for substandard drugs.
- The CDSCO's role is limited to regulating imports and to deciding whether new drugs have adequate clinical evidence before they can be sold.
- Over the years, even the CDSCO has started drawing samples for testing and prosecuting erring manufacturers. In addition, the Health Ministry is

in charge of laying down rules and regulations and banning drugs which do not have supporting clinical evidence.

Example of Himachal Pradesh:

- A problem with this setup is that States such as Himachal Pradesh, which account for a bulk of pharmaceutical manufacturing on account of a tax holiday, do a poor job in enforcing the Drugs and Cosmetics Act.
- This is not just because of poor state capacity; the fear of scaring away investments by the pharmaceutical industry likely plays a key role in the State's decision to not enforce the law.
- Since India is a single market, drugs manufactured in Himachal Pradesh are sold across the country and even States with relatively more competent drug regulators, such as Tamil Nadu, Karnataka and Gujarat, can do little to stop the flood of these substandard drugs.
- It is only the drug controller in Himachal Pradesh who can cancel manufacturing licences of facilities located in that State.
- This is the reason that the Mashelkar Committee in 2003 had recommended centralising drug licensing with the central regulator. The present Bill is silent on the issue.

Issue of transparency

- Drug regulation by its very nature vests vast discretionary powers in unelected bureaucrats to take decisions such as approving a new drug or a new manufacturing facility, both of which can have huge implications for public health and profits of the pharmaceutical industry.
- These decisions are often based on scientific data, inspections, reports, etc. In such circumstances, the only safeguard to ensure bureaucratic accountability is transparency.
- As citizens, we should not be required to run after the regulator begging for information under the Right to Information Act, 2005. Rather, the law should be written in a way to guarantee proactive disclosure of all crucial documentation related to regulatory decisions.
- If a new drug is being approved, the regulator should be required to disclose all the data, including clinical trial data. Every time a drug is tested in a government laboratory, the test report should be published on a publicly accessible database.
- Each inspection for GMP compliance should conclude with an inspection report accessible to the general public. This is the only way to ensure accountability and build public confidence in the regulator.
- The new law is silent on this critical issue of transparency because it is structured largely on the basis of the original colonial-era legislation. The government must consider rewriting this law in a way that guarantees transparency by design.

Way Forward:

- Modern regulation delegates an incredible amount of power to unelected bureaucrats and technocrats. From a perspective of efficiency, such delegation is required, but from the perspective of accountability, it leads to a democratic deficit.
- This is why a modern regulatory system should be designed in a manner that guarantees citizens a right to participate in decision making. Making information available to citizens is only the first step in this process.
- The next step is to create legal pathways, such as public hearings or citizen's petitions which will enable citizens to participate in the regulatory process and register their objections.
- Since the present reform process is still in the early days, nobody will fault the Health Minister for junking this draft Bill and appointing a new committee of external experts to draft a Bill reflecting the democratic character of an India celebrating its 75th year of independence.

LOK SABHA PASSES THE INDIAN ANTARCTIC BILL, 2022



Why in news?

- Recently, the Lok Sabha passed the Indian Antarctic Bill, 2022 moved by Ministry of Earth Sciences.
- The Bill aims at having India's own national measures for protecting the Antarctic environment as also the dependent and associated ecosystem.

Aim:

- The main aim is to ensure de-militarization of the region along with getting it rid of mining or illegal activities. It also aims that there should not be any nuclear test / explosion in the region.
- The bill is in pursuant to India's accession to Antarctic Treaty, the Protocol on Environment Protection (Madrid Protocol) to the Antarctic Treaty and to the Convention on the Conservation of Antarctic Marine Living Resources.

What is the Antarctic Bill?

- The Indian Antarctic Bill is the first domestic legislation with regard to Antarctica in India.

- The Bill seeks to extend the application of domestic laws to research stations set up by India in the Antarctic region.
- A total of 27 countries including Australia, Canada, Chile, France, Germany, Italy, Japan, Republic of Korea, the Netherlands, New Zealand, Ukraine, the United Kingdom, the US and Uruguay already have domestic legislations on Antarctica.
- India has been sending expeditions to Antarctica for the past 40 years. However, these expeditions have been circumscribed by international law.

Indian operations in Antarctica:

- India has two operational research stations in Antarctica named Maitri (Commissioned in 1989) and Bharati (Commissioned in 2012).
- India has successfully launched 40 annual scientific expeditions to Antarctica till date.
- With Himadri station in Ny-Alesund, Svalbard, Arctic, India now belongs to the elite group of nations that have multiple research stations within the Polar Regions.

Key Highlights:

- The Bill puts into place a comprehensive list of regulations related to Antarctica, for such scientific expeditions, as well as for individuals, companies and tourists.
- The Bill proposes to prohibit Indian expedition to Antarctica without a permit or written authorisation of another party to the Antarctic Treaty, provide for inspection by an officer appointed by the government and for penalty for contravention of certain provisions of the legislation.
- It also seeks to constitute a fund for the welfare of Antarctic research work and protection of the environment of the icy continent.
- The Antarctic Bill will extend the jurisdiction of Indian courts to Antarctica, for crimes on the continent by Indian citizens, or foreign citizens who are a part of Indian expeditions.
- So far there was no recourse for crimes committed during an expedition, including crimes against the environment.

Indian Antarctic Authority (IAA):

- The Bill proposed to set-up Indian Antarctic Authority (IAA) under the Ministry of Earth Sciences, which shall be the apex decision making authority and shall facilitate programmes and activities permitted under the Bill.
- It shall provide a stable, transparent and accountable process for the sponsorship and supervision of Antarctic research and expeditions; ensure the protection and preservation of the Antarctic environment; and shall ensure compliance by Indian citizens engaged in the Antarctic programs and activities with relevant rules and internationally agreed standards.

- The Committee will comprise the Secretary Earth Sciences ministry and will also have officials from Defence, Ministry of External Affairs, Finance, Fisheries, Legal Affairs, Science and Technology, Shipping, Tourism, Environment, Communication and Space ministries.
- It will also have a member from the National Centre for Polar and Ocean Research and National Security Council Secretariat.
- The permits can be cancelled by the Committee if deficiencies are found or activities in contravention of the law are detected.

What does the Bill prohibit?

- The Bill prohibits an extensive list of actions on the continent, including drilling, dredging, excavation or collection of mineral resources. An exception can be made if it is done for scientific research with a granted permit.
- It also restricts individuals from damaging the environment, including native plants, birds and seals. It disallows flying or landing helicopters or operating vessels that can disturb the native animals. It prohibits any activity that could harm the habitat of birds and animals, kill, injure or capture any bird or animal.
- Introducing any non-native animals, birds, plants or microscopic organisms is also prohibited under the Bill.
- Violating any of the regulations prescribed by the Bill will attract high penalties.
- The lowest penalty comprises an imprisonment between one-two years and a penalty of Rs 10-50 lakh.
- Extraction of any species native to Antarctica, or introduction of an exotic species to the continent can draw imprisonment of seven years and a fine of Rs 50 lakh.

Way Forward:

- It will facilitate India's interest and pro-active involvement in the management of growing Antarctic tourism and sustainable development of fisheries resources in Antarctic waters.
- It will also help in increased international visibility, credibility of India in Polar governance leading to international collaboration and cooperation in scientific and logistics fields.

Antarctic Treaty:

- The Antarctic Treaty was signed at Washington D.C. on the 1st December, 1959 and was initially signed by 12 countries. Since then, 42 other countries have acceded to the Treaty.
- A total of fifty-four State Parties to the Treaty, twenty-nine countries have the status of Consultative Party with a right to vote in the Antarctic Consultative Meetings and twenty-five countries are Non-Consultative Parties having no right to vote.

- India signed the Antarctic Treaty on the 19th August, 1983 and received the consultative status on the 12th September, 1983.

Convention on the Conservation of Antarctic Marine Living Resources:

- The Convention on the Conservation of Antarctic Marine Living Resources was signed at Canberra on the 20th day of May, 1980, inter alia, for the protection and preservation of the Antarctic environment and, in particular, for the preservation and conservation of marine living resources in Antarctica.
- India ratified the Convention on 17th June, 1985 and is a member of the Commission for Conservation of Antarctic Marine Living Resources under that Convention.

Protocol on Environmental Protection to the Antarctic Treaty:

- The Protocol on Environmental Protection to the Antarctic Treaty was signed at Madrid on 4th October, 1991, inter alia, to strengthen the Antarctic Treaty system and for the development of a comprehensive regime for the protection of the Antarctic environment and dependent and associated ecosystems.
- India signed the Protocol on Environmental Protection to the Antarctic Treaty on 14th January, 1998.

KERALA HIGH COURT'S ORDER ON SEX EDUCATION



Why in news?

- Expressing its concern over the increasing number of child pregnancies, the Kerala High Court said that easy availability of pornographic content online can mislead youngsters.

Background:

- The court made this observation after Justice VG Arun allowed the medical termination of a 30-week pregnancy of a 13-year-old who was impregnated by her minor sibling.
- The plea in the court was filed by the girl's mother who said that the pregnancy was noticed when the survivor was taken to the doctor's office after she complained of abdominal pain and also after she missed her periods for more than two months.

What did the court say?

- The court said that it took the decision to intervene in the case and authorise a medical termination of the pregnancy because the physical strain of carrying a pregnancy at such a young age can have detrimental effects on the child's physical and mental health.
- In this particular case, the girl was a rape survivor, a minor and incest was also involved.
- The court held that it is time for the authorities to take a re-look at the sexual education being imparted in schools.
- The easy availability of porn on the internet can mislead the juvenile minds of youngsters and give them wrong ideas. Educating children about the safe use of the internet and social media is absolutely essential.

How is porn detrimental for young minds?

- According to United Nations Children's Fund (UNICEF), exposure to porn at a young age may result in poor mental health, sexism and objectification and can even promote sexual violence.
- Apart from developing abusive and misogynistic behaviours, children may pass off such acts portrayed in porn as being normal and acceptable.
- According to a 2019 survey commissioned by the British Board of Film Classification, 51 per cent of children aged between 11 to 13 had seen pornographic content online. The pandemic made these figures rise exponentially as children spent more time online, according to an Indian Express report.
- Exposure to porn can also encourage children to engage in unsafe sexual practices.

Sex education in India:

- For a country like India which is the second most populous countries in the world, efforts to make sex education a part of school curriculum still remains bleak.
- The kind of sex education that exists in India mainly covers topics like HIV/AIDS infection and teenage pregnancies. However, there is a lack of awareness with regard to homosexuality, practising safe sex and menstruation among women.
- The National Council for Education, Research and Training (NCERT) had introduced sex education back in 2007. However, Maharashtra, Gujarat, Madhya Pradesh and Goa widely opposed NCERT's proposal and removed sex education from school curriculum.
- Teachers and parents alike protested against its introduction as they considered it as a way of promoting condoms by multinational companies.
- India is obliged to provide free, compulsory and comprehensive education to adolescents as it was one of the signatories to the 1994 United Nations International Conference on Population and Development.

Option with Private schools:

- In India, private schools are free to choose whether to include sexuality education in their curriculum. Those schools affiliated with the Central Board of Secondary Education (CBSE) are required to have a component of sex education in their syllabi but such schools are a minority.
- Most schools do not have any form of sexuality education in their curriculum, said a 2008 report published in the United Nations Human Rights Council.

Conclusion:

- Both schools and parents find it difficult to accept and acknowledge that a teenager is a 'sexual' being.
- The concepts of friendship, romantic relationships, and sexual pleasure taught in a wholesome way are missing. Hence, the youth are learning about sexual pleasure in manipulative, harmful and unsafe ways.

SAMYUKTKISANMORCHA ON SANJAY AGRAWAL COMMITTEE

**Why in news?**

- Recently, the Union Agriculture and Farmers Welfare Ministry formed a committee, as promised by Prime Minister Narendra Modi on November 19, 2021 while announcing the repeal of three controversial farm laws.
- It is headed by former Agriculture Secretary Sanjay Agrawal, to promote zero budget based farming, to change crop pattern keeping in mind the changing needs of the country, and to make MSP (minimum support price) more effective and transparent.

Issue:

- Three slots were kept vacant in the 28-member committee to accommodate nominees of the SamyuktKisanMorcha (SKM), the umbrella body of about 300 farmers' organisations that spearheaded the protests against the three farm laws.
- With the agenda not mentioning making of a law on MSP, the SKM, rejected the government's offer and said it will not send any of its representatives to the panel.

Why is the farmers' organisation upset?

- Since the repeal of the three laws, the Centre communicated with the SKM on the formation of the panel and sought names.
- In their replies, the SKM wanted to know the terms of reference of the proposed committee, names and details of other organisations and individuals who will be included in the committee, chairman's details and so forth.
- The SKM claims that there were no replies to these queries and called for nationwide protests from July 19, the day the Monsoon session of Parliament began. The SKM says that the Centre hurriedly announced the committee to escape questions in Parliament about the delay.

Concerns:

- The SKM, which faced a minor split recently, is upset that the former Agriculture Secretary is chairman of the panel as he was at the helm when the Centre launched the three farm laws as ordinances.
- It also alleges that Niti Aayog member Ramesh Chand, who is also in the panel, was the main advocate of the farm laws. Economists C.S.C. Shekhar and Sukhpal Singh have been against giving legal status to MSP, the SKM argues.
- Both factions of the SKM also allege that the five members representing other farmers' associations are either directly associated with the BJP-RSS or support their policies.

What is the government's stand?

- According to the Centre, it had not promised the SKM a committee to ensure MSP.
- The government had assured the formation of a committee to make MSP more effective and transparent, to promote natural farming and to change crop patterns keeping in mind the changing needs of the country.
- Accordingly, a committee has been constituted consisting of representatives of farmers, Central government, State governments, agricultural economists and scientists, etc.

What do the farmers want?

- The farmers want legal guarantee of MSP, which should be as per the recommendation of the M.S. Swaminathan formula – C2 (input cost for the farming, including the land value) +50%; withdrawal of all cases against farmers who participated in protests and the resignation of the Minister of State for Home Affairs Ajay Teni over the LakhimpurKheri incident.
- On these demands, the SKM has started nationwide protests for a month from July 19. It also points out that there is no mention of making a law on MSP in the agenda of the committee.

What is the MSP on key crops now?

- The government fixes MSPs for 22 mandated agricultural crops and fair and remunerative

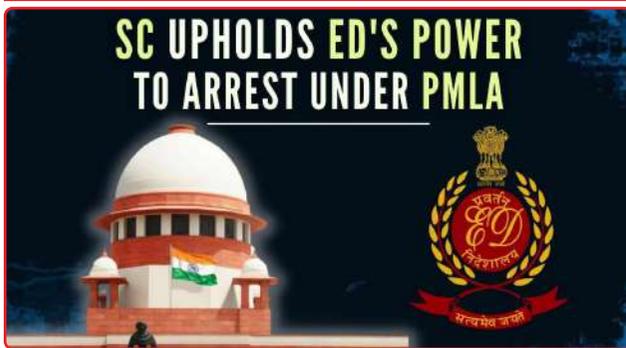
price (FRP) for sugarcane on the basis of the recommendations of the Commission for Agricultural Costs and Prices (CACP), after considering the views of the State Governments and Central Ministries/ Departments.

- ⇒ The 22 mandated crops (the MSP is for a quintal) include 14 kharif crops, six rabi crops and two commercial crops.

What happens next?

- ⇒ Farmers argue that the MSP is much less than the C2+50% formula. But the Centre says there is substantial improvement in the income of farmers as there is a consistent increase in MSP.
- ⇒ The struggle for the legal guarantee of MSP to ensure fair price for the crop to the farmers will continue.

SUPREME COURT UPHOLDS ED'S POWER TO ARREST UNDER PREVENTION OF MONEY LAUNDERING ACT



Why in news?

- ⇒ Recently, the Supreme Court upheld the provisions of the Prevention of Money Laundering Act (PMLA) and retained the powers of the Enforcement Directorate (ED).

Judgement:

- ⇒ The apex court said that the provisions pertaining to arrest and bail are reasonable and have direct nexus to the objectives of the Act.
- ⇒ A three-judge bench, comprising Justices AM Khanwilkar, Dinesh Maheshwari and CT Ravikumar, ruled that supplying the Enforcement Case Information Report (ECIR) copy of the complaint to the accused is not necessary.
- ⇒ The court clarified that it is enough to inform the accused about the grounds on which he or she is being arrested.

Key provisions of the Prevention of Money Laundering Act (PMLA):

- ⇒ **Section 3:** States the offence of money laundering. The court held that generating black money is also money laundering, even without proof of actually laundering it or converting it to white money.
- ⇒ **Section 5 and 8(4):** Under this, the ED has discretionary powers to attach property of the accused. The bench

rejected the argument and held that there are enough safeguards to protect the accused.

- ⇒ **Section 17:** This section gives ED powers to enter and search suspected property without judicial permission. The SC rejected this argument and upheld the provision.
- ⇒ **Section 19:** This section gives the ED powers of arrest. The court upheld its constitutionality.
- ⇒ **Section 24:** Reverses the usual burden of proof in criminal law. In a PMLA case, the judge must assume that the accused person is guilty until he disproves it. The court found this provision valid.
- ⇒ **Section 45:** Deals with bail conditions. The court held that this provision is necessary to achieve the purpose of PMLA.
- ⇒ **Section 50:** The bench held that proceedings under Section 50 are an inquiry, not a criminal investigation. ED officers are hence not police. CrPC rules for investigation do not apply to the ED.

Enforcement Case Information Report (ECIR)

- ⇒ ECIR cannot be equated with FIR and ECIR is an internal document of the ED. Supply of ECIR to accused is not mandatory and only disclosure of reasons during arrest is enough. Even the ED manual is not to be published since it is an internal document.
- ⇒ Considering the mechanism of inquiry/investigation for proceeding against the property (being proceeds of crime) under this Act by way of civil action (attachment and confiscation), there is no need to formally register an ECIR, unlike registration of an FIR by the jurisdictional police in respect of a cognizable offence under the ordinary law.
- ⇒ There is force in the stand taken by the ED that ECIR is an internal document created by the department before initiating penal action or prosecution against the person involved with a process or activity connected with the proceeds of crime.
- ⇒ So long as the person has been informed about the grounds for his arrest that is sufficient compliance of mandate of Article 22(1) of the Constitution.

Issue of Twin Bail:

- ⇒ On the issue of twin bail conditions under the PMLA, the court ruled that the stringent conditions for bail under the Act are legal and not arbitrary.
- ⇒ The fact that some of the offences may be non-cognizable offences under the concerned legislation or regarded as minor and compoundable offences, yet, the Parliament, in its wisdom, having perceived the cumulative effect of the process or activity concerning the proceeds of crime generated from such criminal activities as being likely to pose threat to the economic stability, sovereignty and integrity of the country and thus, grouped them together for reckoning it as an offence of money laundering, is a matter of legislative policy.

- It is not open to the Court to have a second guess at such a policy.
- Enforcement Directorate, Serious Fraud Investigation Office (SFIO), Directorate of Revenue Intelligence (DRI) officials, and not 'police', statements recorded during an inquiry are valid evidence.

Quantum of punishment:

- It cannot be the basis to undermine the seriousness and gravity of this offence. The quantum of sentence is a matter of legislative policy. The punishment provided for the offence is certainly one of the principles in deciding the gravity of the offence. However, it cannot be said that it is the sole factor in deciding the severity of offence as contended by the petitioners.
- Money-laundering is one of the heinous crimes, which not only affects the social and economic fabric of the nation, but also tends to promote other heinous offences, such as terrorism, offences related to NDPS Act, etc.
- It is a proven fact that international criminal network that support home grown extremist groups relies on transfer of unaccounted money across nation, thus, by any stretch of imagination, it cannot be said that there is no compelling State interest in providing stringent conditions of bail for the offence of money-laundering.

Predicate Offence:

- The court made it clear that the offence under Section 3 is dependent on illegal gain of property as a result of criminal activity relating to a scheduled offence. It relates to the process or activity connected with such property that constitutes the offence of money laundering.
- The authorities, under the 2002 Act, cannot prosecute any person on a notional basis or on the assumption that a scheduled offence is committed unless it is so registered with the jurisdictional police and/or is pending trial before a competent forum, the court held.
- Pertinently, acquittal or discharge of a predicate offence or quashing of such an offence will lead to the offence of money laundering also falling.

What's next?

- However, the court held that the question of enactment of amendments in 2019 to the PMLA as a Money Bill has to be decided by a larger bench of seven judges before whom the same question is already pending.

PM LAUNCHES POWER SECTOR'S REVAMPED DISTRIBUTION SECTOR SCHEME

Why in news?

- Recently, the Prime Minister participated in the Grand Finale marking the culmination of 'Ujjwal Bharat Ujjwal Bhavishya – Power @2047' via video conferencing.



- The grand finale of Ujjwal Bharat Ujjwal Bhavishya organized was a national level celebration where the participants and beneficiaries from over 100 districts across the country were connected through virtual mode.

Revamped Distribution Sector Scheme:

- The Prime Minister launched the Ministry of Power's flagship Revamped Distribution Sector Scheme which is aimed at improving the operational efficiencies and financial sustainability of Distribution Companies.

Aim:

- With an outlay of Rs.3,03,758 crore over a period of five years from FY 2021-22 to FY 2025-26, the scheme aims to provide financial assistance to DISCOMs for modernization and strengthening of distribution infrastructure, aiming at improvement of the reliability and quality of supply to end consumers.
- It is also proposed to provide 25 crore Smart Prepaid meters to consumers all over the country.

Portal launched:

- The PM also launched the National portal for Rooftop solar, which will enable online tracking of the process of installation of rooftop solar plants, starting from registering the applications to release of subsidy in residential consumers' ('beneficiaries') bank account after installation and inspection of the plant.
- The estimated capacity under the national solar rooftop program is 4000 MW.
- This will be a major step towards realizing the solar rooftop potential of the nation and will contribute towards India's target to produce 500 GW energy through non-fossil fuels committed in COP-26.

Green Energy projects of NTPC:

- During the programme, the Prime Minister also dedicated and laid the foundation stone of various green energy projects of NTPC worth over Rs 5200 crore.
- The 100 MW Ramagundam Floating Solar Project in Telangana is India's largest floating solar PV project with 4.5 lakh 'Made in India' solar PV modules.
- The 92 MW Kayamkulam Floating Solar Project in Kerala is the second largest floating solar PV project consisting of 3 lakh 'Made in India' solar PV panels floating on water.

- The 735 MW Solar PV Project at Nokh, in Jaisalmer, Rajasthan is India's largest Domestic Content Requirement based Solar project with 1000 MWp at a single location, deploying high-wattage bifacial PV Modules with a tracker system.
- The Green Hydrogen Mobility Project at Leh, Ladakh is a pilot project and aims for five Fuel Cell Buses to be run in and around Leh. This pilot project would be the first deployment of Fuel Cell Electric Vehicles for public use in India.
- The Green Hydrogen Blending Pilot Project at NTPC Kawas Township will be India's first Green Hydrogen Blending Project helping in reducing the usage of natural gas.

National Portal for Rooftop solar:

- With the launch of this Portal, it will be very simple for a residential consumer to apply and get the solar rooftop solar installed. The consumers will have the choice to select, any vendor registered with the local distribution company, solar modules of equality and efficiency, solar inverter and other balance of plants and equipment.
- The process of registration of vendors with the distribution company has been made simple, they have to just submit a declaration along with a PBG amount of Rs. 2.5 lakh and they will get registered.
- These vendors will also get access to provide their information and rates on the National Portal so that any consumer willing to install rooftop solar can contact them and get the rooftop solar installed through mutually agreed rates.
- The process of registration of the application to release of subsidy in the bank account of the consumer can be tracked online on the Portal.
- To protect the interest of consumers, apart from mandating the vendors to get registered at the Discom, the vendor also has to maintain the rooftop solar system for at least 5 years.

Significance:

- This simplification will fasten the installation of rooftop solar in the country and the targeted 4,000 MW capacity under the Rooftop Solar Programme Phase-II would be achieved. The Programme will benefit more than 10 lakh households.
- With the installation of rooftop solar, a household consumer will not only save on electricity bill but will also be able to contribute towards addition of green energy and achieving of national goals.

INTERNATIONAL RELATION

INDIA'S URBAN POPULATION TO STAND AT 675 MN IN 2035, BEHIND CHINA: UN

Why in news?

- Recently, the United Nations-Habitat's World Cities Report 2022, was released.



- It said that rapid urbanisation was only temporarily delayed by the COVID-19 pandemic.
- The global urban population is back on track to grow by another 2.2 billion people by 2050.

Findings on India:

- India's urban population is projected to be 675 million in 2035, growing from 483 million in 2020 to 543 million in 2025 and 607 million in 2030.
- By 2035, the percentage of population in India at mid-year residing in urban area will be 43.2 per cent.

Influence of China & India:

- China's urban population in 2035 is projected at 1.05 billion while the urban population in Asia will be 2.99 billion in 2035 and that in South Asia 987,592,000.
- The report said that very big economies like China and India have a large share of the world's population and their development trajectories have greatly influenced global inequality.
- In Asia, in the last two decades, China and India experienced rapid economic growth and urbanisation, which led to a massive reduction in the number of people living in poverty.

Growing urban population:

- The report said that with existing urban populations continuing to grow naturally through rising birth rates, particularly in lower income countries, the urban population is forecast to grow from 56 per cent of the global total in 2021 to 68 per cent by 2050.
- The large-scale flight from major cities in the early stages of the COVID-19 pandemic to the perceived safety of the countryside or smaller towns was a short-term response that will not alter the course of global urbanisation.
- Despite greater incidence of the virus in urban areas and the economic difficulties created by the pandemic, cities are once again serving as beacons of opportunity to people in search of employment, education and training or taking refuge from conflict.

Numerous challenges:

- The urban poverty and inequality remain one of the most intractable and highly complex problems confronting cities.
- The notoriously overcrowded slums in Mumbai, India; Nairobi and Rio de Janeiro; chronic homelessness

in London; and persistent concentrated poverty in Baltimore, US, all send one clear message to policymakers: tackling urban poverty and inequality is one of the key priorities for building inclusive and equitable urban futures.

- The challenge of climate change, in cities, especially those in warm climates or low-lying coastal areas, face existential threats due to the risks and impacts of climate change and extreme weather events such as increased heatwaves in Delhi, India, and the pervasive flooding in Jakarta, Indonesia, and Durban, South Africa.

Air Pollution:

- Further, in response to the pandemic, many governments worldwide imposed lockdowns and mobility restrictions, the result of which were major improvements in air and water quality.
- Many cities around the world, especially those in developing countries such as China and India, reported unprecedented reductions in the level of airborne pollutants such as PM2.5, PM10, CO2, NO2 and SO2.
- Declines were significant in cities that imposed lockdowns given the dominance of road transportation and associated emissions in urban areas.

Transportation:

- Highlighting the implications of transportation trends during the COVID-19 pandemic, it said that in some countries like India, car dependency increased since the emergence of COVID-19, and people formerly interested in active and public transportation shifted towards private cars.
- These trends show that in the absence of safe, affordable and reliable public transportation systems, the future of urban mobility could continue to be dominated by private motorised vehicles.
- If this scenario emerges, it will have major implications for climate change mitigation and could exacerbate already challenging issues such as air pollution, congestion, and road safety.

Equitable representation of women:

- The future of effective multilevel governance must be attentive to the equitable representation of women.
- The most progressive forms of empowerment of women often come from civil society, such as the self-help organisation Kudumbashree, which has over 4 million female members and played an instrumental role in removing absolute poverty from the state of Kerala, India.

Informal settlements:

- The urban extension has surpassed urban population growth globally and, due to that expansion, many cities have grown beyond the boundaries of their central municipality.

- Informal settlements on the edge of urban jurisdictions are vulnerable to eviction due to unclear regulatory frameworks, as was demonstrated by a recent large-scale eviction in India.

Smart Cities:

- The smart city has become a globally popular catchphrase and major policy paradigm for technology-driven urban innovation and development.
- Many municipal administrations choose to adopt a smart city agenda, to provide strategic and programmatic direction for urban development.
- They are often encouraged by national governments that use competitions to entice cities to invest in smart city programmes, as illustrated by India's 100 Smart Cities Mission and the Republic of Korea's Smart Challenge.

STRAINS ON INDIA-RUSSIA DEFENCE COOPERATION



Context:

- As the war in Ukraine stretches over four months with no end in sight, it has given rise to apprehensions on Russia's ability to adhere to timely deliveries of spares and hardware.

What is the status of India-Russia defence cooperation?

- When the war began in February, the Indian armed forces have stocks of spares and supplies for eight to ten months and the expectation was that the war would end quickly.
- However, as it stretches on with no clear endgame, there are apprehensions on Russia's ability to adhere to the timelines for both spares as well as new deliveries.
- There would not be any dent on the Army's operational preparedness along the borders especially the Line of Actual Control.
- The armed forces have also made significant emergency procurements in the last two years since the standoff in Eastern Ladakh and have stocked up on spares and ammunition. Therefore, there shouldn't be any immediate urgency for spares and other requirements.

- India is also looking at certain alternative mitigation measures and identifying alternate sources from friendly foreign countries while in the long term, this is also an opportunity for the private industry to step up production and meet the requirements.
- Russia has assured India that it would adhere to delivery timelines. However, as the war stretches on there are apprehensions that it could have an impact as the Russian industry would be caught up in replenishing the inventories of their own armed forces.

What is the status of deals underway/new deals pending with Russia?

- The defence trade between India and Russia has crossed \$15 billion since 2018, in the backdrop of some big deals including the \$5.43 billion S-400 long range air defence systems.
- Other major contracts currently under implementation are construction of four additional stealth frigates in Russia and India, licensed production of the Mango Armor-piercing fin-stabilised discarding sabot (APFSDS) rounds for the T-90S tanks as also additional T-90S tanks, AK-203 assault rifles among others. However, there is some delay.
- For instance, the delivery of the second regiment of the S-400 is delayed by a few months as also the operationalisation of the agreement for the manufacture of 6.1 lakh AK-203 rifles at Korwa, Amethi in Uttar Pradesh.
- There are also several big ticket deals currently under negotiation but several of them have been deferred by the Defence Ministry as part of the review of all direct import deals. This is in conjunction with efforts to push the 'Make in India' scheme in defence.

What is the status of payments?

- With Russia being shut out of the global SWIFT system for money transfers, India and Russia have agreed to conduct payments through the Rupee-Rouble arrangement. With several big ticket deals including the S-400 under implementation, there are large volume of payments to be made.
- The Central banks of the two countries had extensively discussed this issue, and officials recently said that small payments have been resumed and work is on to resolve larger payments. For the two countries, payments by the Rupee-Rouble arrangement is not new.
- For instance, for the S-400 air defence systems signed in October 2018, with the looming threat of U.S. sanctions under CAATSA (Countering America's Adversaries Through Sanctions Act), the two sides had worked out payments through the Rupee-Rouble exchange. In fact, the delivery schedule got slightly delayed as the payment was tied up. However, at that time Russia was within the SWIFT system.

Reduction in imports:

- While India continues to remain Russia's largest arms buyer with a major chunk of legacy hardware from Russia and the Soviet Union, the volume of imports has reduced in the last decade.

INDIA-EU: GLOBAL DYNAMICS



Context:

- With carbon neutrality being the byword to a sustainable world, a host of countries; Norway, Sweden, the United Kingdom, France, Spain, Japan, Germany, Canada, Costa Rica, the United States, Brazil, India, and China among others have set for themselves net-zero targets for the middle and later part of the century.
- At the forefront of the commitment to net-zero is the European Union, which wants to be the first carbon-neutral region in the world by 2050.
- It brought out the 'European Union Green Deal' in July 2021 to focus on a new growth strategy that aims to transform the EU society into a fair and wealthy one with a modern, resource-efficient and competitive economy.

CBAM: carbon-pricing system:

- To attain carbon neutrality, the EU has set forth immediate targets and has brought out the 'Fit-for-55' package, a communication of its 2030 climate targets.
- A provision in the policy plan is the introduction of Carbon Border Adjustment Mechanism (CBAM), a carbon-pricing system proposed for imports into the EU.
- The CBAM suggests taxing the imported goods-based difference between carbon used in the production of domestic and imported goods.

How CBRAM will be implemented?

- Proposed to be complementary to the EU Emission Trading Scheme (EUETS), during the transition phase of CBAM, beginning January 1, 2023 importers will only have to report emissions embedded in the production of goods and are not obliged to pay a financial penalty.
- The CBAM, however, will come completely into force from January 1, 2026 and the measure will see a

gradual reduction of free EUETS allowance coverage of 10 percentage points per year and a complete phase-out by 2035.

- In the initial phase, five CITE (Carbon Intensive and Trade Exposed) sectors such as iron and steel, aluminium, cement, fertilizers and electricity will be taxed under CBAM. Eventually, all sectors under EUETS will be brought under its ambit.

Protectionism:

- The EU claims that CBAM is intended to reduce carbon leakage, create a level playfield for EU producers and encourage producers in other countries to adopt cleaner technologies. But several discussions have cropped up around CBAM.
- Developing countries have raised their concern on the legality of CBAM pointing out its conflict with World Trade Organization (WTO) and the United Nations Framework Convention on Climate Change (UNFCCC) norms, and are afraid that it encourages protectionism.
- History provides several instances of conflict between domestic restrictive policies stating environmental concern and trade openness such as the Shrimp-Turtle Case and Air Transport Association of America vs Energy Secretary Case for Energy and Climate Change.
- Rulings in these cases have been in favour of environmental laws, proving that the ongoing debate is a continuation of pre-existing issues and, in the past, environment concerns have outweighed those related to trade.

Revenue from CBAM:

- Developing countries also flag the use of revenue collected from CBAM. According to the EU, revenue collected from CBAM will be a part of the EU's budget, the NextGenerationEU, a recent initiative launched to provide economic support to EU member countries impacted by the COVID-19 pandemic. Countries opposing the proposed revenue utilisation mechanism suggest that if CBAM is to be implemented, revenue collected from it should be used for cleaner technology adoption in developing countries.

India-EU relations:

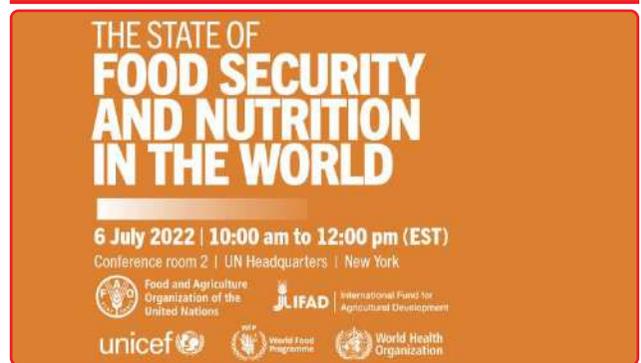
- India and the EU share a healthy trade relationship. The EU is India's third largest trading partner, while India is EU's 11th largest trading partner.
- In 2019-20, India-EU trade accounted for ₹63.8 billion (11.1% of total Indian trade) in goods, while a total of 1.9% of EU's total trade in goods in 2020 came to India. India exports almost 14% of its global exports to the EU.
- Recently, there has been increasing initiative from both sides to deepen engagement with each other. Talks on India-EU Free Trade Agreement (FTA) that were stalled a while ago have picked up again and are scheduled to take place in June.

- The target to finalise the Free Trade Agreement has been set for 2023-24.

Way Forward:

- Both India and the EU are committed to climate change, and the recent progress in India-EU alliance opens prospects of a customised partnership and mutual growth.
- Rather than tax on exports to EU as proposed in CBAM, India and EU can cooperate better by investing in cleaner and greener technologies in India and helping in cleaning up production in India. Such a partnership will ensure that both India and the EU have their agendas of economic growth and sustainability fulfilled, a win-win situation for both entities.

STATE OF FOOD SECURITY AND NUTRITION IN THE WORLD 2022 REPORT : UN



Why in news?

- Recently, the State of Food Security and Nutrition in the World 2022 report was issued by UN agencies Food and Agriculture Organisation (FAO), International Fund for Agricultural Development (IFAD), UNICEF, World Food Programme (WFP) and the World Health Organisation (WHO).
- The number of people affected by hunger globally rose to as many as 828 million in 2021, an increase of about 46 million since 2020 and 150 million since the outbreak of the COVID-19 pandemic.

Key findings on India:

- In India, the number of undernourished people declined to 224.3 million in 2019-21 from 247.8 million in 2004-06.
- In percentage terms, the prevalence of undernourishment in the total population in India stood at 21.6 per cent in 2004-06 and declined to 16.3 per cent in 2019-21, the prevalence of stunting in children under 5 years of age declined to 30.9 per cent in 2020 from 41.7 per cent in 2012 and the prevalence of overweight children under five years of age was 1.9 per cent in 2020 from 2.4 per cent in 2012.
- The prevalence of obesity in India's adult population increased to 3.9 per cent in 2016 from 3.1 per cent in

2012 and anaemic women aged 15 to 49 years declined marginally from 53.2 per cent in 2012 to 53 per cent in 2019.

- In India, people who were unable to afford a healthy diet touched 973.3 million in 2020 or nearly 70.5 per cent, up from 948.6 million in 2019 (69.4 per cent).
- In 2017, about a billion people were unable to afford a healthy diet in India and this number has declined to 966.6 million in 2018.

Subsidies:

- The subsidies to consumers provided in Lower-Income Countries and Middle-Income Countries most often take the form of in-kind or cash transfers under the social protection programmes.
- India and Indonesia, for example, provide substantial subsidies to final consumers under the Targeted Public Distribution System for grains in India, and the food assistance programme (BPNT) based on electronic vouchers for rice, in Indonesia.
- The most prominent example of a (Lower-middle-income countries) LMIC is India, where the food and agricultural policy has historically focused on protecting consumers by ensuring affordable food prices, through export restrictions (on wheat, non-basmati rice, and milk, among others) and through marketing regulations around pricing and public procurement, public food stockholding and distribution of a vast range of agricultural commodities, it said.
- As such, farmers have constantly faced price disincentives in aggregate terms (negative NRPs). Input subsidies and expenditure on general services such as in R&D and infrastructure have been widely used as a means of compensating them for the price disincentives generated by trade and market measures, and for boosting production and self-sufficiency in the country.

Global Observations:

- After remaining relatively unchanged since 2015, the proportion of people affected by hunger jumped in 2020 and continued to rise in 2021, to 9.8 per cent of the world population.
- This compares with 8 per cent in 2019 and 9.3 per cent in 2020.
- World hunger rose in 2021, with around 2.3 billion people facing moderate or severe difficulty obtaining enough to eat that was before the Ukraine war, which has sparked increases in the cost of grain, fertiliser and energy.
- The gender gap in food insecurity continued to rise in 2021; 31.9 per cent of women in the world were moderately or severely food insecure, compared to 27.6 per cent of men --- a gap of more than 4 percentage points, compared with 3 percentage points in 2020.
- An estimated 45 million children under the age of five were suffering from wasting, the deadliest form of

malnutrition, which increases children's risk of death by up to 12 times.

- Furthermore, 149 million children under the age of five had stunted growth and development due to a chronic lack of essential nutrients in their diets, while 39 million were overweight.

Concerns:

- It warned that the ongoing war in Ukraine, is disrupting supply chains and further affecting prices of grain, fertiliser and energy resulting in more price increases in the first half of 2022.
- At the same time, they said, more frequent and extreme climate events are also disrupting supply chains, especially in low-income countries.
- Ukraine and Russia together produced almost a third of the world's wheat and barley and half of its sunflower oil, while Russia and its ally Belarus are the world's No. 2 and 3 producers of potash, a key ingredient of fertiliser.
- Nearly 924 million people (11.7 per cent of the global population) faced food insecurity at severe levels, an increase of 207 million in two years.

Conclusion:

- This report repeatedly highlights the intensification of these major drivers of food insecurity and malnutrition: conflict, climate extremes and economic shocks, combined with growing inequalities.

GLOBAL GENDER GAP INDEX 2022

| INDIA'S REPORT CARD | | | | |
|--------------------------------------|----------------------|-------|----------------------|-------|
| Index/sub-index | 2022 (146 countries) | | 2021 (156 countries) | |
| | Rank | Score | Rank | Score |
| Global Gender Gap Index | 135 | 0.629 | 140 | 0.625 |
| Political empowerment | 48 | 0.267 | 51 | 0.276 |
| Economic participation & opportunity | 143 | 0.350 | 151 | 0.326 |
| Educational attainment | 107 | 0.961 | 114 | 0.962 |
| Health and survival | 146 | 0.937 | 155 | 0.937 |

Source: World Economic Forum

Why in news?

- Recently, the Global Gender Gap Index for 2022 was released by the World Economic Forum (WEF).

The top 10:

- Although no country achieved full gender parity, the top 10 economies closed at least 80% of their gender gaps, with Iceland (90.8%) leading the global ranking.
- Iceland was the only economy to have closed more than 90% of its gender gap.
- Other Scandinavian countries such as Finland (86%, 2nd), Norway (84.5%, 3rd) and Sweden (82.2%, 5th) are in the top five, with other European countries such as Ireland (80.4%) and Germany (80.1%) in ninth and tenth positions, respectively.
- Sub-Saharan African countries Rwanda (81.1%, 6th) and Namibia (80.7%, 8th), along with one Latin American country, Nicaragua (81%, 7th), and one

country from east Asia and the Pacific, New Zealand (84.1%, 4th), also take positions in the top 10.

India's rank:

- It ranks India at 135 out of 146 countries.
- In 2021, India was ranked 140 out of 156 countries.
- India also ranks poorly among its neighbours and is behind Bangladesh (71), Nepal (96), Sri Lanka (110), Maldives (117) and Bhutan (126).
- Only Iran (143), Pakistan (145) and Afghanistan (146) perform worse than India in south Asia.

What is the Global Gender Gap Index?

- The Global Gender Gap index benchmarks the current state and evolution of gender parity across four key dimensions:
 - a) Economic Participation and Opportunity
 - b) Educational Attainment
 - c) Health and Survival
 - d) Political Empowerment
- It is the longest-standing index, which tracks progress towards closing these gaps over time since its inception in 2006.
- On each of the four sub-indices as well as on the overall index the GGG index provides scores between 0 and 1, where 1 shows full gender parity and 0 is complete imparity.

How has India fared on different sub-indices?

- India has approximately 662 million (or 66.2 crore) women. In 2022, India's overall score has improved from 0.625 (in 2021) to 0.629.
- India's (135th) global gender gap score has oscillated between 0.593 and 0.683 since the index was first compiled. In 2022, India scored 0.629, which is its seventh-highest score in the last 16 years.

India's performance on different sub-indices:

Political Empowerment:

- This includes metrics such as the percentage of women in Parliament, the percentage of women in ministerial positions etc. Of all the sub-indices, this is where India ranks the highest (48th out of 146).
- However, notwithstanding its rank, its score is quite low at 0.267. Some of the best ranking countries in this category score much better. For instance, Iceland is ranked 1 with a score of 0.874 and Bangladesh is ranked 9 with a score of 0.546.
- Moreover, India's score on this metric has worsened since last year – from 0.276 to 0.267. The silver lining is that despite reduction, India's score is above the global average in this category.

Economic Participation and Opportunity:

- This includes metrics such as the percentage of women who are part of the labour force, wage equality for similar work, earned income etc.
- Here, too, India ranks a lowly 143 out of the 146 countries in contention even though its score has improved over 2021 from 0.326 to 0.350. Last year,

India was pegged at 151 out of the 156 countries ranked.

- India's score is much lower than the global average, and only Iran, Pakistan and Afghanistan are behind India on this metric.

Educational Attainment:

- This sub-index includes metrics such as literacy rate and the enrolment rates in primary, secondary and tertiary education. Here India ranks 107th out of 146, and its score has marginally worsened since last year. In 2021, India was ranked 114 out of 156.

Health and Survival:

- This includes two metrics: the sex ratio at birth (in %) and healthy life expectancy (in years).
- In this metric, India is ranked the last (146) among all the countries. Its score hasn't changed from 2021 when it was ranked 155th out of 156 countries.

Gender Parity:

- The Global Gender Report 2022, which includes the Gender Gap Index, says it will now take 132 years to reach gender parity, with the gap reducing only by four years since 2021 and the gender gap closed by 68.1%.
- But this does not compensate for the generational loss between 2020 and 2021 as the trends leading up to 2020 showed that the gender gap was set to close within 100 years.
- South Asia will take the longest to reach gender parity, which is estimated to be likely in 197 years.

PACIFIC LEADERS DECLARE CLIMATE EMERGENCY



Why in news?

- Recently, Pacific island national leaders declared a climate emergency.

Details:

- Leaders from across the South Pacific have called for urgent global action on climate change following a four-day Pacific Islands Forum (PIF) meeting in Fiji, where they also pledged more unity in dealing with regional security issues in an apparent rebuke of China's push for a regionwide security deal.

➤ During their first in-person meetings since 2019, representatives declared that the Pacific is facing a climate emergency that threatens the livelihoods, security and wellbeing of its people and ecosystems.

Rising sea levels:

- Small islands in the Pacific and Indian oceans, as well as coastal mega-cities in China and South and Southeast Asia, have a particular vulnerability to the effects of climate change, namely rising sea levels.
- Some could even see much of their territory become uninhabitable over the coming decades, according to experts.
- In this context, Australia's renewed commitment to cutting emissions by 43% by 2030 was welcomed at the meeting.

2050 Strategy for the Blue Pacific Continent:

- It also saw the launch of the "2050 Strategy for the Blue Pacific Continent," a long-term regional guideline for cooperation in key areas, including governance, people-centered economic development and climate change.

Sino-U.S. geopolitics:

- In terms of Sino-U.S. geopolitical competition in the region, the Pacific leaders appear to have rebuffed a Chinese push for closer security and trade ties with 10 island nations, while welcoming U.S.'s new plans for a greater American presence in the region and a tripling of U.S. development aid.
- The forum members agreed that, while every nation has the right to make its own sovereign decisions, the PIF would serve as a platform for closer coordination on security issues that have an impact beyond national borders.
- The pledge came after China struck a secretive security deal with the Solomon Islands in March, triggering concerns that this could pave the way for China establishing a military base in the region.

U.S. proposals:

- Meanwhile, the PIF members welcomed a proposal by U.S. Vice President to, among other things, appoint a regional envoy and triple economic development aid to the region to bolster maritime security, combat illegal fishing and tackle climate change.
- The U.S. would establish two new embassies in the region in Tonga and Kiribati.

Kiribati:

- They agreed to try to bring Kiribati back to the region's main diplomatic grouping.
- Kiribati announced it had withdrawn from the 18-member Pacific Islands Forum ahead of a leaders' summit in Fiji.
- The move was seen as a sign of China's growing influence in the region.

About Pacific Islands Forum (PIF):

- The Pacific Islands Forum is the region's premier political and economic policy organisation.

- Founded in 1971, it comprises 18 members: Australia, Cook Islands, Federated States of Micronesia, Fiji, French Polynesia, Kiribati, Nauru, New Caledonia, New Zealand, Niue, Palau, Papua New Guinea, Republic of Marshall Islands, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu.

PAKISTAN & EXTENDED FUND FACILITY (EFF)



Why in news?

- Recently, the staff-level talks between Pakistan and the International Monetary Fund (IMF) concluded for the seventh and eighth review under Extended Fund Facility (EFF). The talks were originally aimed at releasing a tranche of \$900 million.

Background:

- The talks, which began on March 4, were expected to conclude by March 16; however, it took five months to reach the staff-level agreement.
- This brings the total disbursement under the current EFF to \$4.2 billion so far, to support policy actions under FY 2023 budget, power sector reforms, and monetary policy to restrain inflation.
- The latest IMF press release maintains it would consider an extension of the current EFF to end June 2023 and augment the fund amount to \$7 billion.

What was the Extended Fund Facility (EFF), and why did the talks take longer to conclude?

- The 39-month EFF between the two was signed in July 2019 to provide funds amounting to Self-Drawing Rights (SDR) – \$4,268 million. The EFF was signed by Pakistan to address the medium-term balance of payment problem, and work on structural impediments and increase per capita income.
- The IMF placed demands including fiscal consolidation to reduce debt and build resilience, the market-determined exchange rate to restore competitiveness, eliminate 'quasi-fiscal' losses in the energy sector and strengthened institutions with transparency.
- The decision to freeze the fuel prices by the then Pakistani President Imran Khan in February 2022 was considered a major deviation under the EFF benchmarks.

- Loans under Kamyab Pakistan Program were another point of contention. The IMF insisted on its demands before approving any release of the tranche.

How important is the IMF support to Pakistan?

- Pakistan's economic situation is dire. According to the Economic Survey of Pakistan 2022, the fiscal deficit in FY 22 was \$18.6 billion, and the net public debt at \$252 billion, which is 66.3% of the GDP. The power sector's circular debt is \$14 billion.
- The current account deficit has peaked to \$48.3 billion. The budgeted expenditure outlay for FY 23 states that 41% (\$19 billion) of total expenditure will be used in debt servicing.
- The IMF's support in addressing the above numbers is crucial. According to the latest quarterly report of the Economic Affairs Division, during the financial year 2021-22, the IMF's contribution to the total external debt (of \$9.4 billion), is only \$834 million.
- However, the IMF's support is not limited to fixing the balance sheet, but validates and provides economic confidence to other multilateral institutions.

Why have the Pakistan-IMF relations remained complicated? Will the new government be able to improve the trust deficit?

- Structural reforms require long-term commitment, which have been sacrificed due to Pakistan's short-sighted political goals; hence the urge to go to the IMF for fiscal stability has been repeated over time.
- Pakistan has signed various lending instruments with the IMF, and sought support from IMF around 22 times. However, only once has a programme been completed. Since the 1990s, the IMF has placed specific demands but were addressed by Pakistan in bits and pieces.
- The latest EFF was on the verge of collapse, but the ruling coalition government continued its efforts to revive the discussions.
- To address the structural benchmarks of the IMF, the authorities have worked on specific legislations, for example, the State Bank of Pakistan (SBP) amendment act, and the Finance Bill 2022.

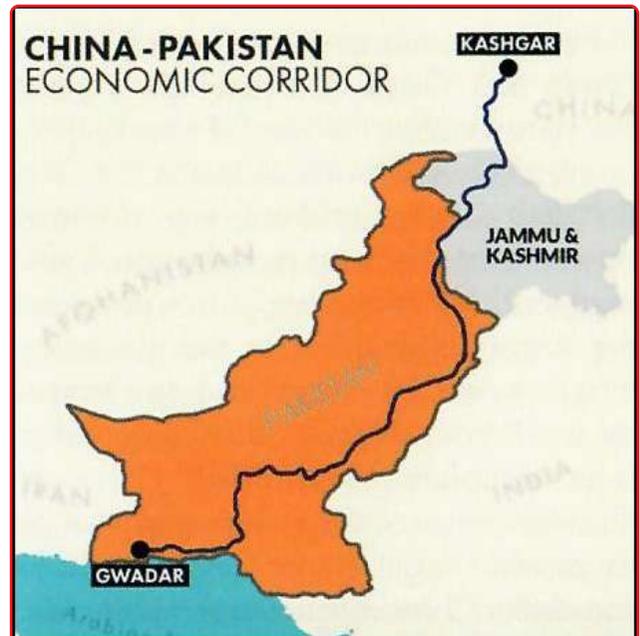
What lies ahead for Pakistan and the IMF?

- Despite the latest agreement, the road ahead for the IMF and Pakistan is not an easy one. Political calculations and the elections ahead will play a role in Pakistan's economic decision-making.
- In 2019, the Director-General Debt Office of the Ministry of Finance revealed that Pakistan has to pay \$31 billion by 2026. Total public debt as a percentage of gross domestic product is expected to increase further.
- There is also a narrative that Pakistan has the fifth largest population with nuclear weapons that cannot be allowed to fail.
- A section within Pakistan also places the geo-strategic location of the country would provide an

edge for cooperation, rather than coercion. Hence, this section believes, the IMF would continue to support.

- Given the IMF's increased assertion, Pakistan's political calculations and the elections ahead, the relationship between the two is likely to remain complicated.

CHINA-PAKISTAN INVITING OTHER NATIONS TO JOIN CPEC IN POK



Why in news?

- India has slammed China and Pakistan for their efforts to encourage third countries to join projects relating to their multi-billion dollar connectivity corridor that passes through Pakistan-occupied Kashmir.
- This comes after Pakistan and China at a meeting of the CPEC Joint Working Group (JWG) on International Cooperation and Coordination, Pakistan and China decided to welcome interested third countries to join the flagship CPEC initiative.

What is Chinese Pakistan Economic Corridor (CPEC)?

- The CPEC is part of China's ambitious Belt and Road Initiative (BRI) which China described as a 'transcontinental long-term policy and investment programme which aims at infrastructure development and acceleration of the economic integration of countries along the route of the historic Silk Road'.
- The \$60 billion CPEC was launched in 2013 to improve Pakistan's road, rail and energy transportation infrastructure besides connecting its deep-sea port of Gwadar with China's Xinjiang province.
- The major CPEC projects underway are Bostan Industrial Zone (SEZ) near Quetta, Balochistan;

Chaman district of Balochistan bordering with Afghanistan; Gwadar Port, Specially Zone-I & Zone-II; some patrolling units on CPEC's western alignment which covers hostile areas of Balochistan like Awaran, Khuzdar, Hoshab and Turbat areas; Mohmand Marble City (SEZ) near Mohmand Agency bordering with Afghanistan and Sost Dry-Port & Moqpondass Special Economic Zone Gilgit-Baltistan.

- China has previously outlined plans to extend CPEC to Afghanistan under its tripartite diplomatic initiative.

Why is India upset?

- India has been consistently been critical of CPEC, which includes a network of highways, rail links, power plants, manufacturing units and massive infrastructure projects, on the ground that the projects are built on territory illegally occupied by Pakistan.
- Much like Sri Lanka, Pakistan is caught in a debt trap due to huge investments in CPEC and has been facing down a serious economic crisis.
- This, even as Pakistan earlier in July reached an agreement with the International Monetary Fund to revive a \$6 billion bailout package.
- Pakistan has leased some of its big industrial projects to Chinese firms, which has led to them taking on even more debt – the same vicious cycle that ensnared Sri Lanka.
- CPEC has also been criticised for exploiting Pakistan's natural resources without commensurate benefits to local communities.
- This is not the first time that Pakistan has solicited third-party investments in CPEC. Its earlier bid to reach out to Saudi Arabia and the UAE did not yield results.

What did India say?

- In a sharp reaction, External Affairs Ministry said such activities under the China-Pakistan Economic Corridor (CPEC) are “inherently illegal, illegitimate and unacceptable”, and will be treated accordingly by India.
- India has consistently been critical of projects in the so-called CPEC projects which are in India's territory that has been illegally occupied by Pakistan.
- India's grand geopolitical strategy is motivated in part by the dual goals of challenging and delegitimising China's BRI in resource-rich regions of the world, including Central Asia and Africa.

West backs India:

- The India-USA Joint Statement 'Prosperity through Partnership' released in June 2017 called upon all nations to support bolstering regional economic connectivity through transparent development of infrastructure and the use of responsible debt financing practices, while ensuring respect for sovereignty and territorial integrity, the rule of law and the environment.

- The India-Japan 'Prosperity through Partnership' released in September 2017 also underlined the importance of all countries ensuring the development and use of connectivity infrastructure in an open, transparent and non-exclusive manner based on international standards and responsible debt financing practices, while ensuring respect for sovereignty and territorial integrity, the rule of law and the environment.

- The European Commission issued a Joint Communication in September 2018 titled 'Connecting Europe and Asia – Building blocks for an EU Strategy', which highlighted that the European Union promotes an approach to connectivity, which is sustainable, comprehensive and rules-based.

- US president Joe Biden and other G7 leaders unveiled ambitious plans to mobilise \$600 billion in funding by 2027 to deliver transparent and game-changing infrastructure projects in developing countries like India in a move seen as a counter to China's BRI.

How has Pakistan responded to India?

- Pakistan termed India's stand as “baseless and misguided” and said attempts to cast aspersions over the multi-billion dollar connectivity corridor show India's “insecurity and pursuit of a hegemonic agenda.”

- The CPEC is a transformational project and a harbinger of stability, mutual cooperation and shared development for the region.

- As a flagship of the Belt and Road Initiative and hallmark of the Pakistan-China All-Weather Strategic Cooperative Partnership, CPEC provides a vehicle for the people of the region to break from zero-sum approaches.

Tensions between China & Pakistan:

- Recently, China pressed for Chinese firms to take over the security of thousands of workers from China employed in dozens of CPEC projects.

- The all-weather ties “currently appear under deep stress because of growing terrorist attacks on Chinese citizens”.

- The Chinese had demanded permission for deployment of private Chinese security guards for the protection of Chinese personnel and installations. Though Pakistani authorities did not allow that, the issue remains very much on the table.

- Pakistan in recent months has been witnessing a spate of attacks against Chinese workers employed in projects under the CPEC.

- China in July asked Pakistan to “get to the bottom” of the April suicide attack that killed three Chinese nationals at the Karachi University, a day after authorities in Sindh province claimed to have arrested the mastermind and pointed finger at an unnamed “neighbouring country”.

Unfinished projects:

- Meanwhile, Pakistan over the past seven years has completed only three CPEC projects in Gwadar while one-dozen schemes costing nearly \$2 billion remain unfinished including those of water supply and electricity.
- The big projects under the project were having problems raising the required funds and the completed projects were shut down, a media portal previously reported, adding that the government of Pakistan also abolished the CPEC authority, which was set up for smooth and rapid development.
- Chinese companies also stopped generating electricity in CPEC projects demanding payment of arrears.
- High-interest rates on CPEC loans, rising project costs, weak projects, and attacks on CPEC infrastructure are major issues in what has become a white elephant dream.

EU PLANS TO REDUCE GAS USE BY 15% AMID THREAT OF RUSSIA



Why in news?

- Recently, the European Union governments agreed to reduce consumption of natural gas to protect themselves against any further supply cuts by Russia amid its invasion of Ukraine, although the measure contains exemptions for some countries.
- EU energy ministers approved a draft European law designed to lower demand for gas by 15 per cent from August 2022 through March 2023.

Background:

- The energy ministers approved the compromise legislation a day after Russian energy corporation Gazprom said it would cut gas flows through the Nord Stream 1 pipeline to Germany to 20 per cent of capacity.
- Natural gas prices jumped to their highest level since early March, according to Europe's TTF benchmark, and more than five times what they were a year ago.

How will it work?

- Under the ministerial agreement, the EU's member nations are free to decide how best to meet the target

of cutting 15 per cent of their average annual gas use over the last five years.

- France, for example, wants to save energy by turning down office thermostats in winter and ensuring that air conditioners in public buildings and shops are used more efficiently.
- EU president said a 15 per cent reduction in would save 45 billion cubic metres (bcm) of gas, Russia delivered about 150 bcm of gas to the EU in 2021 and that it would enable the bloc to "make it safely through the winter" in case of a complete cut-off from Russia.
- It would also avoid the need to impose forced curtailment measures that could see some industries compelled to slow down production to save energy.

Mandatory provision:

- The energy ministers scrapped a provision in the draft law that would have given the European Commission the power to decide on any move from voluntary to mandatory actions. Instead, the ministers ensured any decision on mandatory steps would remain in the hands of national governments.
- However, if that does not yield enough savings, mandatory actions in the 27-member bloc would be triggered.
- The European Commission, can ask members to consider triggering a mandatory system of cuts if it still fears a supply shortage in the next eight months. Any five member countries could also trigger a vote if they declare a gas supply alert at the national level.
- Although the EU has agreed to embargo oil and coal from Russia starting later in 2022, the bloc has refrained from sanctioning Russian natural gas because Germany, Italy and some other member states rely heavily on imported gas.

Why is this happening?

- This comes amid worries that the EU will struggle to meet gas storage capacities ahead of winter as well as fall short of securing additional supplies to fill in the gaps during the colder months.
- EU has estimated that the EU's GDP could take a hit by as much as 1.5 per cent in the event of a cold winter and if preventative energy saving measures are not taken.

Which countries are exempt?

- The three island nations not connected to the EU gas network, Cyprus, Ireland and Malta are exempt from the compulsory energy savings.
- Only Hungary, a close ally of Russia, came out against the EU's decision with its foreign minister saying the decision was against its interests.

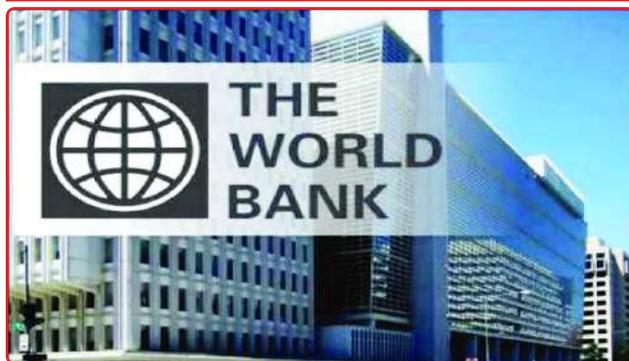
How disruptions in Russian energy trade with the EU is affecting the region?

- Since Russia invaded Ukraine in late February and the West moved to punish Russia by imposing economic sanctions, 12 EU countries have faced halts to, or reductions in, their Russian gas deliveries.

- Russia supplied about 40 per cent of Europe's natural gas before the war, but that has dropped to about 15 per cent, sending prices through the roof and straining energy-intensive industries. Companies warn that they often can't switch overnight to other energy sources.
- The disruptions in Russian energy trade with the EU already are stoking inflation to record levels in Europe and threatening to trigger a recession just as the bloc was recovering from a pandemic-induced slump.
- The energy squeeze also is reviving decades-old political challenges over policy coordination. While the EU has gained centralized authority over monetary, trade, antitrust and farm policies, national sovereignty over energy issues still largely prevails.

ECONOMY

WORLD BANK GRANTS INDIA \$1.75 BN LOAN FOR HEALTH, PRIVATE INVESTMENT



Why in news?

- Recently, the World Bank has approved loans totalling USD 1.75 billion to fund India's PM Ayushman Bharat scheme and private investment to boost the economic growth.

Details:

- Of the total loan, USD 1 billion will go towards the health sector, while the rest USD 750 million will be in the form of development policy loan (DPL) to fill the financing gaps through private sector investment in the economy.
- The World Bank Board of Executive Directors approved two complementary loans of USD 500 million each to support and enhance India's health sector.

Boost to health sector:

- Through this combined financing of USD 1 billion, the World Bank will support India's flagship Pradhan Mantri-Ayushman Bharat Health Infrastructure Mission (PM-ABHIM), launched in October 2021.
- The funds will be used to improve public healthcare infrastructure across the country.
- In addition to the national-level interventions, one of the loans will prioritize seven states namely Andhra

Pradesh, Kerala, Meghalaya, Odisha, Punjab, Tamil Nadu, and Uttar Pradesh.

Private sector:

- Separately, its board approved the DPL to the union government to support reforms critical to addressing financing gaps by leveraging private sector investment in infrastructure, small businesses, and the green finance markets.
- Indian government has taken several measures over the past decade to improve financial inclusion as well as the stability of the financial sector and the domestic capital markets. This has resulted in a more efficient and resilient sector in the face of the COVID-19 crisis and other external shocks.

Pressure on public resources and financing:

- Despite this progress, pressure on public resources and financing needs for key sectors of the economy remain high. For infrastructure and micro, small and medium enterprises (MSMEs), the annual finance gap is estimated at 4 per cent of GDP and between Rs 1825 lakh crore, respectively.
- In addition, the World Bank estimates show that the energy transition required to meet the government's COP26 commitments will require an annual cumulative investment of 1.5 per cent of GDP.

Health sector outcomes in India:

- India's performance in the health sector has improved over time. It has estimated India's life expectancy at 69.8 in 2020, up from 58 in 1990, higher than the average for the country's income level.
- The under-five mortality rate (36 per 1,000 live births), infant mortality rate (30 per 1,000 live births), and maternal mortality ratio (103 per 1,00,000 live births) are all close to the average for India's income level, reflecting significant achievements in access to skilled birth attendance, immunizations, and other priority services.
- These advances in the health sector, COVID-19 has underscored the need for revitalizing, reforming, and developing capacity for core public health functions, as well as for improving the quality and comprehensiveness of the health service delivery.

PHSPP & EHSDP:

- Under health, two loans; Public Health Systems for Pandemic Preparedness Programme (PHSPP) and Enhanced Health Service Delivery Programme (EHSDP) are designed to be complementary and transformational in impact.
- It will support the Indian government's reform agenda to accelerate universal coverage, improve quality, and increase the resilience and preparedness of the health system.
- PHSPP will support the government's efforts to prepare India's surveillance system to detect and report epidemics of potential international concerns;

enhancing capacity to detect pathogens, including zoonotic diseases and strengthen coordination and build institutional capacity of core public health institutions.

- EHSDP will support the government's efforts to strengthen service delivery through a redesigned primary health care model; improve quality of care by supporting the National Quality Assurance Standards certification across Health and Wellness Centres (HWCs); and transform the health sector governance and accountability by strengthening implementation capacity.

FAST-TRACKING FTAS: DEEPER AGREEMENTS WARRANT INTER-MINISTERIAL COORDINATION

Context:

- India has revamped its strategy towards free trade agreements (FTAs) to boost exports as an engine of growth. It is currently negotiating/planning several FTAs with the UK, EU, Canada, Israel, Gulf Cooperation Council, among others.
- To fast-track this process, the fact that the government is mulling a proposal to set up an inter-ministerial panel. The warrant for such a panel is to ensure better coordination as differences on crucial and sensitive issues within ministries overseeing different sectors tend to delay FTA negotiations.



Why inter-ministerial panel is needed?

- The stakeholders with conflicting interests across sectors make negotiations hard. For instance, the domestic dairy industry's apprehensions of stiff competition in dairy products from Australia and New Zealand were responsible in large part for India to walk out of the Regional Comprehensive Economic Partnership although some other sectors were less hesitant to join the grouping.
- Similarly, opposition from the automobile and electronics industry effectively prevented an early harvest agreement with Thailand 18 years ago to graduate into a full-fledged FTA.

Negotiations for new FTA:

- The new thrust towards FTAs saw a comprehensive economic partnership agreement with UAE in

March, followed by an economic cooperation and trade agreement with Australia. Talks are on for an agreement with UK by Diwali.

- India and EU resumed negotiations for an FTA after a gap of about nine years and are planning to launch the next round of talks in September.
- The ambitiousness in the deals with Australia and UK, however, is only for early harvest agreements or mini-FTAs for trade in a limited set of goods and services. They could be a precursor for a full-fledged FTA but only much later.

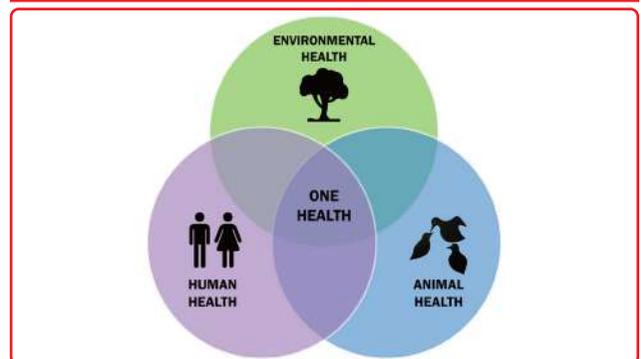
Compliance with WTO:

- The proposed inter-ministerial panel is clearly intended to facilitate such FTAs as they are higher order agreements that also entail regulatory policy reform.
- The FTA recently signed between EU and New Zealand, for instance, had provisions for sustainability and labour rights.
- The proposed FTA discussions with Israel must factor in its concerns over the violation of intellectual property rights norms.
- India has also joined the US-led Indo-Pacific Economic Framework which will define shared objectives on trade facilitation, standards for the digital economy and technology, supply chain resilience, decarbonisation and clean energy, infrastructure, and worker standards, among others.
- India might not be on the same page as the US on digital commerce and labour standards, for instance.

Way Forward:

- Such new generation deals clearly call for greater stakeholder coordination within the government, cutting across various ministries and departments, as they entail more than preferential tariff-line liberalisation.

ONE HEALTH: WHAT IT IS & HOW IT CAN BE IMPLEMENTED IN INDIA



Why in news?

- The Food and Agriculture Organization of the United Nations (FAO), the World Organization for Animal Health (OIE) and the World Health Organization

(WHO), under their tripartite agreement and in collaboration with the United Nations Children's Fund (UNICEF) and the World Bank, have developed a joint strategic framework to implement the One Health approach.

- The framework aims to assist national authorities in initiating steps to strengthen efforts towards the control of zoonoses and AMR in a comprehensive manner through collaborative activities among various sectors for a healthier and productive human and animal population co-existing in a safe environment.

Background:

- 'Pandemic-preparedness plans' are already under consideration among major international bodies to thwart pandemic in the future. The multi-disciplinary approaches of 'One Health' are central to these plans.
- The core of the One Health approach is rooted in acknowledging and understanding the interdependence of human and natural systems to obtain optimal health for people, animals and the environment.
- About 60 per cent of the known infectious diseases in humans and 75 per cent of all emerging infectious diseases are caused by pathogens that originate in animals, according to the Centers for Diseases Control and Prevention.

One Health can have the following benefits:

- Reduce potential threats at the human-animal-environment interface to control diseases that spread between animals and humans
- Tackle anti-microbial resistance (AMR)
- Ensure food safety
- Prevent environment-related health threats to humans and animals
- Protect biodiversity

One Health concept:

- The One Health concept is not new but its importance to address the complex health and environmental challenges has become more prominent in recent years.
- This is because potential solution to these problems can only be understood when human, animal, and environmental health questions are evaluated in an integrated and holistic manner rather than in siloed approaches.
- An important aspect of such an integrated approach is the systematic collection of data on the occurrence of infectious diseases and related behaviours in both humans and animals.

Implementation:

- Improved collaboration, coordination and commitment of relevant sectors to minimise the impact of these diseases on human health is also a salient feature.

- The implementation of One Health can be driven by policies (legislations and regulations, financing), knowledge sharing, institutional collaboration, joint programmes and operational plans, advocacy and awareness amongst policy makers and professionals, engagement of civil society and active community participation.

Efforts by India:

- In India, efforts have been made to bring human and animal health together. There have been instances of collaboration at national and state levels to combat specific diseases or to overcome disease outbreaks such as the national influenza pandemic committee to control avian influenza, rabies in the Tamil Nadu and other states.
- Institutes like the Indian Council of Medical Research (ICMR) and the Indian Council of Agricultural Research (ICAR) have collaborated for joint research priorities, mostly to control disease outbreaks and also at individual levels between human and animal health researchers as well as practitioners.
- The Integrated Disease Surveillance Project, launched in 2004 for disease outbreak detection and rapid response functions, has generated several information on flow of certain disease outbreaks but the programme has been unable to integrate human and animal (livestock and wildlife) surveillance.

Road Map to Combat Zoonoses (2008):

- A multi-disciplinary Road Map to Combat Zoonoses (2008) was laid to create an integrated mechanism for surveillance, detection and treatment of zoonoses.
- It identified several strategies for research and actions, but an integrated surveillance, involving human, domestic and wildlife for long-term monitoring on a large scale have failed to materialise. As a result, the burden and dynamics of emerging and re-emerging infectious diseases is yet to be understood.
- But recently, there have been several proactive steps which acknowledge the relationships between biodiversity loss, changing land use patterns and zoonotic diseases.

National Mission on Biodiversity and Human Well-being :

- The National Mission on Biodiversity and Human Well-being built on a framework that integrates biodiversity, ecosystem services, climate change, agriculture, health, bio-economy and capacity-building in the realm of biodiversity science has one mission component that explicitly links biodiversity to human health through the One Health approach.

Dedicated Centre:

- The Government of India decided to set up a dedicated centre under ICMR to contain zoonotic diseases – the Centre for One Health at Nagpur, and also constituted a 'National Expert Group on One Health' to promote

multi-sectoral, transdisciplinary, collaboration and co-operation to adopt and implement a One Health framework in India.

- In the past, India has combatted several zoonotic diseases and has a robust institutional network for biomedical research, which can lead and operationalise the One Health approach.

The strategy element involves:

- Improving the capacity for public health actions in major stakeholders human health, animal health and environment management
- Understanding and responding to the drivers that threaten health; optimising the effectiveness of public health systems in achieving these goals within each sector
- Institutionalise strong, continuous and mutually beneficial coordination and collaboration between all stakeholders through multi-disciplinary and multi-institutional joint planning and implementation.

Way Forward:

- For One Health science, it is important to develop databases and models with a consolidated approach of ecologists, field biologists, epidemiologists and other scientists.
- Therefore, a nexus of science, social science, indigenous knowledge and policy at national, state and local levels can put forward strategies and institutions for implementation of One Health.

CREATE MORE JOBS, REVAMP EMPLOYMENT POLICY



Why in news?

- The Government of India has recently announced its plan to create 10 lakh government jobs in the next 18 months. Of about 40 lakh sanctioned posts, 22% posts are now vacant and the Government will fill these posts in 18 months.
- Though the announcement has been called a “historic step in the interest of the youth” and as “raising a new hope and confidence among youth”, the plan has serious problems.

Vacancies:

- There are as many as 8.72 lakh positions that were vacant in various departments of the Central government, according to the Ministry of State in Personnel, Public Grievances and Pensions.
- If various positions in public sector banks, the defence forces and police, the health sector, central schools and central universities, and the judiciary are added, then the number touches about 30 lakh posts. This number does not include vacancies in State government jobs.
- As sanctioned posts broadly indicate the required posts needed to run a government, it appears that this government is perhaps facing a serious shortage of staff, which is then causing long delays in work, corruption and maybe other inefficiencies.
- The Government, however, has not made any complaints about such shortages in recent years.

'Quality' as issue:

- Another major concern is about the quality of employment that will be generated through this plan. The share of contract workers in total government employment has been increasing rapidly in recent years, from 11.11 lakh in 2017 to 13.25 lakh in 2020 and to 24.31 lakh in 2021.
- In addition, there are “honorary workers” such as Anganvadi workers, their helpers, accredited social health activist (ASHA) workers, etc.
- These employees of the government earn a lower salary (consolidated wages), and are not entitled to “decent work” conditions (International Labour Organization recommendations) including a minimum package of social security.
- The Government must ensure that the employment generated under its plan will be of a standard quality. There has been no assurance so far on this by the Government.

High Unemployment:

- The total labour force in the country stands at 437.2 million (April 2022 data). At a labour force participation rate of 42.13%, the unemployment rate of the youth is about 20% at present.
- Given the backlog of about 30 million unemployed people and an annual addition of 50 lakh-70 lakh workers every year (World Bank), the dimensions of India's unemployment problem today are formidable.
- The generation of a mere 10 lakh jobs in the next 18 months is too little. This scheme of the Government will hardly provide any relief to the youth of the country; and will not have much of an impact on the present unemployment problem.

Need for Government intervention:

- It is important to note here that the performance of the private sector in creating employment opportunities has remained dismal.

- ⇒ Currently, when the economy is still struggling to overcome the shocks caused by the novel coronavirus pandemic, and when private final consumption expenditure has not crossed the pre-pandemic level, private firms are being seen to be managing their profit margin by cutting costs (in the form of rationalising wage bills).
- ⇒ In this situation it is all the more important for the Government to ensure as many jobs as possible.

Focus on basic needs:

- ⇒ As is claimed, if the Government is really in 'mission mode' to provide employment to the unemployed, and to the youth, it will have to do much more than what has been announced. To start with, the Government will have to create more employment within the Government. Recent national and international reports and rankings have shown that India is lagging far behind most other countries in terms of health and nutrition, particularly women and children, in education, literacy and skills, holistic care of children in early childhood and later; drinking water and sanitation, and other basic infrastructure, etc.
- ⇒ The Government will have to take responsibility for meeting these basic needs without depending on privatization, at least for the bottom 40% of the population.
- ⇒ The first task for the Government would be to take much better direct care of basic well-being, human development and human resource development, and the basic infrastructure of the bottom population without privatisation in these areas.

Reorient the industrialisation policy:

- ⇒ Another major task would also be to reorient the industrialisation policy to focus on labour-intensive sectors of the economy, and promote Micro, Small and Medium Enterprises (MSMEs) and informal production by ensuring better technology and higher productivity, providing finances (including working capital) and pushing further cluster development for all industries that have the potential.

Urban employment:

- ⇒ And, finally, considering the fact that the urban economy has been badly hurt by the pandemic, a carefully designed urban employment guarantee programme would be most desirable to create ample urban employment avenues for urban youth.
- ⇒ This programme will have to be different from the rural employment guarantee programme.

The urban programme should include:

- a) basic urban services, where the youth would get special training so that they can be absorbed in the mainstream economy;
- b) day-care centres set up for childcare to enable women to reduce their unpaid services and to ensure quality care for children; and

- c) infrastructural gaps filled in under construction work to facilitate quality urban life.

Way Forward:

- ⇒ If the gesture of filling vacant posts in the Government is part of a mission employment, it will have to be followed by radical changes in the Government's employment policy.
- ⇒ Let us hope that people of India will be able to discern the motives behind the gesture, and assess the Government's performance accordingly.

IMPACT OF EURO-DOLLAR PARITY

Why in news?

- ⇒ The Euro and the U.S. dollar reached parity, meaning one dollar could buy one euro in the foreign exchange market. For over two decades, it took more than one U.S. dollar to purchase one euro.
- ⇒ Just a year ago it took about 1.2 U.S. dollars to purchase one euro. Since the beginning of the year the euro has lost about 12% against the U.S. dollar and it is expected to lose more value going forward.

What determines a currency's exchange rate?

- ⇒ The price of any currency in a market economy is determined by supply and demand.
- ⇒ The supply of a country's currency in the foreign exchange market is determined by various factors such as central bank policy and the local demand for imports and foreign assets.
- ⇒ The demand for a country's currency, on the other hand, is determined by factors such as central bank policy and the foreign demand for exports and domestic assets.



Why has the Euro fallen against the U.S. dollar?

- ⇒ Analysts believe that the divergence in the monetary policies of the U.S. Federal Reserve and the European Central Bank is the primary reason behind the euro's significant depreciation against the U.S. dollar.
- ⇒ In response to the economic crisis caused by lockdowns imposed to fight the coronavirus pandemic, both the Federal Reserve and the ECB expanded their balance sheets to boost spending. But this soon led to a rise in prices.

- Inflation in the U.S. hit a four-decade high of 9.1% in June while inflation in the Eurozone reached its highest-ever level of 8.6% during the same month.
- The U.S. Federal Reserve responded to the rising prices by raising the interest rates this year in order to slow down U.S. money supply growth. The ECB, however, has been far less aggressive in tightening policy even though the inflation rate is as high as 22% in some European countries.
- This has caused the value of the euro to slide against the dollar as currency trader's witness, or at least expect, the supply of euros in the market rising relative to the supply of dollars.

Japanese Yen:

- The euro, however, is not the only currency that is depreciating at the moment. The Japanese yen is another major currency that has lost about 20% of its value against the U.S. dollar in 2022 as the Japanese central bank continues to stick to its easy monetary policy.

Ukraine war:

- The value of euro has been affected by the uncertainty in energy supplies in the wake of Russia's invasion of Ukraine and the ensuing actions against Russia.
- Europe now has to shell out more euros to import limited energy supplies, which in turn has adversely affected the value of the euro against the U.S. dollar.

What happens next?

- As the U.S. Federal Reserve continues to raise interest rates, this is likely to exert further downward pressure on the euro.
- The ECB may be forced to raise interest rates to slow down money supply growth in the Eurozone in order to prop up the value of the euro against the dollar.
- But this is likely to lead to a slowdown in growth in the Eurozone as its economy will have to readjust to tighter monetary conditions. If so, European nations might opt to enact tax and regulatory reforms to expedite the recovery.

FARMERS' AVERAGE INCOME: SBI STUDY



Why in news?

- Recently, SBI released a report based on primary data of its agriculture portfolio across states, which

contains granular data of various crops from agri-intensive branches and analyses the change in income of farmers over the past five years.

- The study came barely days after the Centre showcased success stories of farmers who have managed to double their incomes during the past few years.

Key Highlights:

Diversification in income:

- It shows that between financial year 2017-18 and 2021-22, the average income of farmers rose by 1.3 -1.7 times across India, while in some crops like soybean in Maharashtra and cotton in Karnataka, incomes have in fact doubled during the same time.
- The increase in income of farmers growing cash crops has been more than those growing non-cash crops between FY18 and FY22.
- The income from allied and non-farm activities grew by a significant 1.4-1.8 times in line with the increase in farmers' income during the same period.
- This substantiates the trend as per the 77th National Sample Survey that the source of farmer income has become increasingly diverse apart from crops.

Ashok Dalwai Committee on Doubling Farmers:

- The Ashok Dalwai Committee on Doubling Farmers' income set up by the Central government in its 14-volume report released a few years ago, had said that to double income from both farm and non-farm sources, it would have to grow by 10.4 per cent between 2015-16 and 2022-23 (the terminal year) in real terms (inflation-adjusted) and not nominally.
- It had estimated the average annual income of an agricultural household in 2015-16 at Rs 96,703, which was projected to grow to Rs 1,72,694 by 2022-23, that is the end of the current financial year.

Loan Waiver:

- The SBI report also strongly criticises farm loan waivers announced by various states and the Centre during the past few years, saying the write-offs have failed to bring respite to the intended subjects, sabotaged credit discipline in select geographies and made banks/FIs wary of further lending.
- It said since 2014, of about 37 million eligible farmers, only around 50 per cent received the amount of loan waiver (till March 2022), though in some states over 90 per cent of farmers received the debt waiver amount.

Minimum Support Price (MSP):

- The report also said that Minimum Support Price (MSP), increasingly aligned with market-linked pricing, has been pivotal in ensuring better prices to farmers.
- MSP has, in many cases, led to optimal price discovery, setting floor price benchmarks for many crop varieties (23 currently), and prompting farmers

to gradually move over to crops that have better yield or value

Livelihood Credit Card (LCC):

- It said the Kisan Credit Cards (KCC) scheme, continuously improved and revamped by the government, has been instrumental in bringing a large number of farmers (currently about 73.7 million active KCCs) under the ambit of a formal credit mechanism at subsidised rate of interest from institutional players.
- However, current regulatory norms take too much of the banks' time in renewing and expanding KCCs. If simplified, they could save a lot of time, which could be then reallocated for fresh lending.
- SBI estimated that banks use about 2.3 million man days to renew KCC loans. This time could have been used for fresh lending to agriculture, if the norms were simplified.
- It suggested a Livelihood Credit Card (LCC) encompassing a multi-purpose loan covering a rural household's entire activities for ease of doing business.

Tenancy:

- The study also called for state intervention to give tenancy certificates to tenant farmers to bring them into the formal credit system.
- It had estimated that there are 20-30 million landless or tenant farmers in India based on its analysis of PM-KISAN and KCC beneficiaries.

Self-Help Groups (SHGs):

- The report also said NPAs of women-led Self-Help Groups (SHGs), which number over 800,000 in the country, is more than 10 per cent across India.
- Within this, certain states Uttar Pradesh, Haryana and Punjab have NPA ratios of over 25 per cent, while some like Andhra Pradesh, have the lowest ratio of 0.8 per cent.

GOVT FORMS MSP PANEL TO DISCUSS WAYS TO MAKE SYSTEM EFFECTIVE

Why in news?

- The Centre has constituted a committee headed by former Union Agriculture Secretary Sanjay Agrawal to look into the issues of minimum support price (MSP), as promised to the Samyukt Kisan Morcha (SKM) earlier in January.

Details:

- Eight months after announcing the repeal of farm laws, the Centre set up a 29-member committee, as promised by Prime Minister, to see how to make the minimum support price (MSP) more effective and transparent.
- Besides, it will also suggest measures to promote zero-budget natural farming and crop diversification to fulfil the changing food security requirement.



Composition:

- Apart from Agrawal, NITI Aayog Member (Agriculture) Ramesh Chand, agricultural economists CSC Shekhar and Sukhpal Singh, award-winning farmer Bharat Bhushan Tyagi, members from other farmer organisations Gunwant Patil, Krishnaveer Choudhary, Pramod Kumar Choudhary, Gumi Prakash and Sayyed Pasha Patel, IFFCO chairman Dilip Sanghani, CNRI general secretary Binod Anand, senior member of the CACP Naveen P. Singh, agriculture experts P Chandrashekhar, J.P. Sharma and Pradeep Kumar Bisen will be members of the panel.
- Secretaries of Departments of Agriculture and Farmers Welfare, Agricultural Research and Education, Food and Public Distribution, Cooperation, Textiles and Director General ICAR will represent the Centre in the panel. Representatives of State governments, and the member-secretary of the panel will be Joint Secretary (Crops).

Agenda:

- It also says that the committee will discuss methods to strengthen the Agricultural Marketing System as per the changing requirements of the country to ensure higher value to the farmers through remunerative prices of their produce by taking advantage of the domestic output and export.
- On natural farming, the committee will make suggestions for programmes and schemes for value chain development, protocol validation and research for future needs and support for area expansion under the Indian Natural Farming System through publicity and through involvement and contribution of farmer organisations.
- On crop diversification, the panel will look into the mapping of existing cropping patterns of agro-ecological zones of producer and consumer States. It will look for a strategy for diversification policy to change the cropping pattern according to the changing needs of the country.
- Arrangement for agricultural diversification and system to ensure remunerative prices for the sale of new crops, review and suggestion on micro irrigation scheme are also part of the agenda of the panel.

Background:

- The Government has opened a door for the farmers' union SanyuktKisanMorcha (SKM) under which hundreds of farmers from Punjab, Haryana and Western UP had staged protests at Delhi borders for over a year pressing their demand on the legal guarantee of the MSP.
- The panel has three unfilled posts for representatives of the SKM, which will be filled as and when the Centre receives the recommendations from the umbrella body of farmers.

CONTROVERSY OVER GST LEVIES ON FOOD**Why in news?**

- Recently, a 5% Goods and Services Tax (GST) has been levied on several food items and grains that are sold in a pre-packed, labelled form even if they are not branded. So far, these items, which include curd, lassi, buttermilk, puffed rice, wheat, pulses, oats, maize and flour, were exempted from the GST net.
- The fresh tax levies have attracted an outcry from traders as well as Opposition parties, with proceedings in Parliament's Monsoon session repeatedly disrupted over the issue.

EXEMPTION STATUS

| | |
|--|---|
| <p>All these items when sold loose will be exempt from GST</p> <ul style="list-style-type: none"> ➤ Pulses/ Daal ➤ Wheat ➤ Rye ➤ Oats ➤ Maize ➤ Rice | <ul style="list-style-type: none"> ➤ Aata/ Flour ➤ Suji/Rawa ➤ Besan ➤ Puffed Rice ➤ Curd and Lassi |
|--|---|

Source: FM's tweet

“ This was a unanimous decision by the GST Council. All states were present in the GST Council when this issue was presented by the group of ministers on rate rationalisation in the 47th meeting held in Chandigarh on June 28, 2022... ”

— NIRMALA SITHARAMAN | FINANCE MINISTER

How did the rate hikes come about?

- The 5% tax on unbranded packed food items was approved by the GST Council in June 2022, and was part of a broader set of changes in the GST structure to do away with tax exemptions as well as concessional tax rates.
- Some of the other items to have lost their tax-exempt status include bank cheques, maps and atlases, hotel rooms that cost up to ₹1,000 a night, and hospital room rents of over ₹5,000 a day.
- While the decision was signed off by the Council, chaired by Finance Minister, the ground for such changes in the GST regime was set at the Council's previous 'regular' meeting at Lucknow in September 2021.
- During that meeting, the Centre and States had discussed the need to raise revenues from the GST, which at the time of its launch five years ago, was premised on levying a 'revenue-neutral' rate of 15.5%.

- Officials made a detailed presentation to show that several changes in rates since 2017 had brought down the effective rate to 11.6%.

GoMs:

- Shoring up GST revenues was the driving force for the Council's decision to form two groups of Ministers (GoMs) – one to consider steps to rationalise the tax rates and correct anomalies, and another to tap technology to improve compliance.
- The current rate changes stem from an interim report of the first ministerial group, led by Karnataka Chief Minister Basavaraj Bommai based on officials' recommendations.

What has the government said on the issue?

- Finance Minister hit out at misconceptions about the GST levies on food items and dismissed suggestions that they were imposed unilaterally by the Centre.
- The 5% levy was critical to curb tax leakages and was not taken by 'one member' of the GST Council alone as all States had agreed to the move.
- All affected food items, including wheat, pulses, rice, curd and lassi, will be exempt from GST when sold loose. The Revenue Department has also clarified that pre-packed items weighing over 25 kg would not attract GST.
- When GST was rolled out, a GST rate of 5% was made applicable on branded cereals, pulses, flour. Later this was amended to tax only such items which were sold under a registered brand or brands on which enforceable right was not foregone by the supplier.
- This tax exemption triggered 'rampant misuse' by reputed manufacturers and brand owners leading to a gradual drop in revenues.

What's next?

- The traders' body, the Confederation of All India Traders (CAIT), has urged all Chief Ministers to roll back the tax by holding an emergency meeting of the GST Council, arguing that 85% of the country's consumers use such unbranded goods.
- Economists expect a marginal impact from these taxes on India's consumer inflation rate that has now been over 7% through the first quarter of 2022-23. One will have to wait for August's retail inflation print to gauge the effect.
- The GST Council is also expected to meet again in August, where the issue may be raked up afresh.
- Meanwhile, the Karnataka CM has urged firms to avail of input tax credits on their packaging material rather than transfer the full 5% tax onto consumers.
- On cue, the Karnataka Milk Federation partially rolled back price hikes for curd, lassi and buttermilk. How the majority of informal market players implement these taxes may be an important factor in determining the next chapter of GST rate rationalisation.

12TH MINISTERIAL CONFERENCE (MC12) OF WTO



Context:

- In the recently concluded 12th Ministerial Conference (MC12) of the World Trade Organization (WTO), the European Union (EU) and some other developed countries are the overwhelming winners, while India finds itself on the losing side.

The COVID-19 fight:

- The ministerial outcome on the so-called TRIPS waiver represents the biggest gain for the EU.
- In October 2020, India and South Africa put forth a proposal seeking to temporarily suspend the protection of intellectual property rights such as patents, copyrights, industrial designs and trade secrets, so that the production of vaccines, therapeutics and diagnostics could be ramped up to help overcome the crisis and fight the COVID-19 pandemic.
- The proposal garnered the support of almost 100 countries at the WTO. The opponents of the proposal, i.e. Germany, the United Kingdom, Japan, Switzerland and the United States, found themselves on the wrong side of the global opinion on this issue.
- In June-July 2021, the U.S. gave its support to the proposal, but limited it to vaccines.
- Other developed countries, particularly Germany and the U.K., found themselves at the receiving end of the ire of their civil society organisations and prominent opinion makers.

EU's proposal:

- The European Union (EU) made a counter-proposal to undermine the proposal made by India and South Africa. This counter proposal provided a cosmetic simplification in certain procedural aspects of compulsory licensing in patent rules.
- With the active support of the WTO's Director-General, it also launched a process in December 2021 to reach a compromise. In a completely opaque process, by March 2022, India and South Africa were corralled into accepting the EU's proposal.
- This formed the basis of the final outcome at the MC12. The ministerial outcome adds very little to what already exists in the WTO rulebook. To make matters worse for developing countries, it adds stringent conditions that are not in the WTO rulebook.

Victory for EU:

- The outcome of the TRIPS waiver has provided a facesaver to the EU, as it can now look in the eye of its civil society organisations and confidently say that it has done its bit to save the world from COVID-19. The final outcome is almost unworkable; a big public relations victory for the EU.
- The EU has also scored important gains in two other areas, WTO reform and environment issues.
- In the name of WTO reform, the EU sought to make fundamental changes to the institutional architecture of the WTO. It also sought to give a formal role to the private sector in WTO processes. And, it has secured both these objectives in the ministerial outcome.
- The EU has also managed to create a window to pursue negotiations on issues related to trade and environment at the WTO, an issue of concern for many developing countries.

Solution for public stockholding:

- Turning to India, the issue of a permanent solution to public stockholding was identified by the Indian Minister of Commerce and Industry, Piyush Goyal, as being its top most priority and nothing more important than it for the world.
- Despite having the support of more than 80 developing countries, this issue has not found mention anywhere in the ministerial outcome.
- Instead, the WTO members have succeeded in diverting attention from India's interest by agreeing that food security is multi-dimensional, requiring a comprehensive solution.

Other issues of India:

- India has also failed in many of its other objectives, such as securing the right to raise revenues by taxing electronic transmissions.
- In the area of fisheries subsidies, it gets two years to have suitable regulatory mechanisms in place to monitor fish catch and reporting. Otherwise, subsidies to traditional fishermen will be prohibited.
- Although it has secured a temporary reprieve to provide subsidies for enhancing its fishing fleets, it will have to fight an uphill battle on this issue in future negotiations. Further, the outcome on the TRIPS waiver bears no resemblance to its proposals.

Way Forward:

- Overall, the path ahead for India at the WTO is difficult. India's negotiators need to undertake soul searching to learn lessons from the dynamics at the MC12, and make course corrections.

INDIA'S FIRST INTERNATIONAL BULLION EXCHANGE

Why in news?

- The Prime Minister will launch the India International Bullion Exchange (IIBX) at Gujarat

International Finance Tec-City (GIFT City) as well as lay the foundation stone of the unified regulator International Financial Services Centres Authority's headquarters building.



GIFT City:

- GIFT City is India's maiden International Financial Services Centre (IFSC).
- As per the International Financial Services Centres Authority (IFSCA), the India International Bullion Exchange will facilitate efficient price discovery with the assurance of responsible sourcing and quality, apart from giving impetus to the financialisation of gold in India.

What is bullion and a bullion market?

- Bullion refers to physical gold and silver of high purity often kept in the form of bars, ingots, or coins. It can be considered legal tender and is often held as reserves by central banks or held by institutional investors.
- Though there are several bullion markets around the world, the London Bullion Market, which allows trading 24 hours a day and facilitates futures and options trading, is the primary global market trading platform for gold and silver.
- These bullion markets are typically over-the-counter (OTC) markets, that is to say, they deal in physical gold and silver.

What about the IIBX?

- The National Stock Exchange, Multi Commodity Exchange, India INX International Exchange, National Securities Depository and Central Depository Services Ltd have joined hands to establish the holding company India International Bullion Holding IFSC, which will operate the International Bullion Exchange.
- The IIBX, announced in the 2020 Union Budget, has enrolled jewellers to trade on the exchange and set up the infrastructure to store physical gold and silver.
- 56 qualified jewellers have been approved by the IFSC regulator IFSCA to import bullion and transact on the exchange.
- To become a qualified jeweller, you must have a minimum net worth of Rs 25 crore and 90 per cent of

the average annual turnover in the last three financial years through deals in goods categorised as precious metals.

- The exchange will have three vaults – one operated by Sequel Global (ready and approved), the second one to be operated by Brinks India is ready and awaiting final approval and the third under construction.

How will it work?

- Once gold is imported, it will be stored at the IFSC Authority-approved vault.
- Being a spot exchange, all the open positions will be marked for delivery at the end of the day.
- The initial pilot trading at the exchange with small transactions in last few months has been successful.

What are the advantages?

- The IIBX will be a gateway for bullion imports into India, where all bullion imports for domestic consumption shall be channelised through the exchange.
- In addition to providing a trading avenue to various participants, a bullion exchange will also offer the advantages of price discovery, transparency in disclosures, guaranteed centralised clearing and assurance of quality.
- A bullion exchange, apart from providing standardisation and transparent mechanism, will also be an important step towards financialisation of bullion-based products.
- The IFSCA has ensured sourcing integrity of the bullion delivered through IIBX by mandating compliance to Organisation for Economic Cooperation and Development (OECD) Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas.
- This will lead to quality assurance and sourcing integrity. With the regulatory foundations in place, IFSCA intends to nurture a bullion ecosystem aimed at positioning India in the international markets, initially as a price influencer and ultimately as a price setter.

PM to launch NSE IFSC-SGX Connect:

- The Prime Minister will also launch NSE IFSC-SGX Connect. Under this system, all orders on Nifty derivatives placed by members of Singapore Exchange Limited (SGX) will be routed to and matched on the NSE-IFSC order matching and trading platform.
- Brokers and dealers from India and across international jurisdictions are expected to participate in large numbers for trading derivatives through the connect.

SECURITY

MH-60 'ROMEO' MULTI-MISSION HELICOPTERS FOR INDIAN NAVY



Why in news?

- The Indian Navy recently received two MH-60 'Romeo' multi-mission helicopters from the US.
- The two choppers were delivered at Cochin airport while another helicopter is scheduled to be delivered in August.

Background:

- India has been in need of the Seahawk helicopters for over a decade. The US state department under the Donald Trump administration in 2019 had approved the sale of 24 multi-role MH-60 Romeo Seahawk helicopters to India.

Details:

- The first three MH-60 'Romeo' helicopters were delivered in the US in 2021 and are being used for training of the Indian Navy crew.
- In all, the Indian Navy is slated to receive 24 helicopters from the US, all of which will be armed with Hellfire missiles and lethal rocket systems.
- India is procuring the choppers as part of an around Rs 15,000-crore deal with the US government under the framework of foreign military sales.
- The delivery of all 24 MH-60R helicopters will be completed by 2025. The induction of state-of-the-art mission capable platforms will significantly boost the integral anti-submarine warfare capability of the Indian Navy.

Features of MH-60R chopper:

- The MH-60R helicopter manufactured by Lockheed Martin Corporation is an all-weather helicopter designed to support multiple missions with state-of-the-art avionics and sensors.
- The helicopters, designed to operate from frigates, destroyers, cruisers and aircraft carriers, are the US Navy's primary anti-submarine warfare, anti-surface weapon system for open ocean zones.
- The MH-60R is the world's most advanced maritime helicopter.
- Over 300 MH-60R Seahawk helicopters are operational worldwide with over 600,000 flight hours accumulated, as per the website.
- The choppers are being used in international operations by the US Navy, Royal Danish Navy, Royal Australian Navy and Royal Saudi Naval Forces.

How will it boost the Indian Navy's capabilities?

- Indian Navy's first batch of MH-60R 'Romeo' aircrew successfully completed their training at the naval air station, North Island, San Diego, on 1 April.
- These helicopters will fulfil the Indian Navy's requirements for anti-submarine operations amid China's increasing forays into the waters around India.
- The navy currently uses the P-8I aircraft for this purpose.

Anti-Submarine Operations:

- These Romeo aircraft can detect unknown submarines and ships lurking in the waters and have the capability to launch submarine detection sono-buoys, both active and passive as part of anti-submarine (ASW) ops.
- ASW assets are vital for any fleet as they help alert about threat of a stealth submarine. These assets provide an ASW screen and will help to neutralise any hostile submarine or underwater threats.
- These can be loaded with missiles and torpedoes for ASW action

Anti-Submarine Warfare:

- 'Romeo' choppers also have anti-surface-warfare capabilities, which means they will be capable of detecting surface threats and taking action against enemy ships too.
- These choppers can perform a slew of tasks including tracking and engaging with submarines, search and rescue ops, logistics support, personnel transport, medical evacuation, and surveillance.
- These multi-mission helicopters have command, control, communications, computers and intelligence (C4I) capabilities and are designed for anti-submarine (ASW) and Anti-Surface Warfare ((ASuW), and they are capable of engaging targets which are over the horizon.

Way Forward:

- It will provide India the capability to perform anti-surface and anti-submarine warfare missions along with the ability to perform secondary missions including vertical replenishment, search and rescue, and communications relay.
- India will use the helicopters as a deterrent for threats from its neighbours and for homeland security.

INDIAN AIR FORCE TO RETIRE MIG-21 SQUADRON, PHASE OUT BY 2025

Why in news?

- Over 400 MiG-21 aircraft of the Indian Air Force have crashed in the last 60 years, claiming the lives of over 200 pilots and 60 civilians.
- Recently, two pilots were killed when a MiG-21 trainer aircraft crashed during a training sortie in

Rajasthan's Barmer, putting the infamous aircraft in the spotlight once again.



- The MiG-21 has been dubbed grim nicknames, such as the "widow-maker or the flying coffin", owing to numerous crashes since its induction into the Indian Air Force in the 1960s.

Background:

- The MiG-21 is India's longest-serving fighter plane. India got its first single-engine MiG-21 in 1963, and since then it has inducted 874 variants of the Soviet-origin supersonic fighters to bolster its combat potential.
- Over 60 per cent of them have been built in India by Hindustan Aeronautics Limited (HAL). However, half of the Made-in-India MiG-21s have crashed, killing over 200 pilots.
- In 2000, Indian MiG-21s were upgraded with new sensors and weapons.
- It was in this modified MiG-21, that Wing Commander Abhinandan Varthaman shot down a F-16 fighter of Pakistan in 2019, a day after India had carried out air strikes in Balakot.

Why do MiG-21 fighter jets crash so much?

- MiG-21s form the bulk of the Indian Air Force's inventory and that explains why so many of them have crashed over the years.
- More numbers, more use and more years in service translate into a higher number of crashes.

Why are they still in service?

- Currently, the IAF has around 70 Mig-21 aircraft and 50 Mig-29 variants.
- The Indian Air Force had to keep MiGs longer in service due to delays in induction of new fighter aircraft. Due to delays, the IAF is facing a crunch to maintain a certain squadron strength to guard India's skies.
- Delays in the indigenous Tejas programme, political controversy surrounding the Rafael deal and slow-paced procurement procedure meant that MiGs had to be kept in service longer than usual.
- The MiG-21 had completed its retirement period in the mid-1990s.
- Until the government speeds up acquisition of new fighter jets, to replace the ageing MiGs, the Indian Air

Force does not have the option than to use MiG-21s, piloted by young men, to bolster its squadron strength.

Retire & Phase out:

- In a major step to ensure flight safety, the Indian Air Force (IAF) will retire 51 Squadron based out of Srinagar air base comprising the MiG-21 Bison aircraft by September 30, 2022. The 51 Squadron based out of Srinagar air base is being number plated on September 30.
- The 51 squadron famous for shooting down an F-16 aircraft of the Pakistan Air Force in post Balakot air strike operations in February 2019 is being number plated on September 30.
- The squadron, also known as 'Swordarms', was part ' of 'Operation Safed Sagar' during the Kargil conflict in 1999.
- With this, only three of the MiG 21 bison squadrons would be left in the Air Force, of which one would be retired every year and the fleet would be totally gone by the year 2025.

What's next?

- To help the IAF replace its ageing fighter fleet, the Defence ministry in February 2021 sealed a Rs 48,000 crore deal with the Hindustan Aeronautics Ltd (HAL) for the procurement of 83 Tejas fighter aircraft. The IAF is also in the process of procuring 114 Multi-Role Fighter Aircraft (MRFA).
- India is also working on an ambitious USD 5 billion project to develop a fifth-generation medium-weight deep penetration fighter jet to significantly bolster its air power capability.

ENVIRONMENT

US SUPREME COURT'S EPA RULING



Why in news?

- Recently, the United States Supreme Court curbed the ability of the Environmental Protection Agency (EPA) to regulate the emission of greenhouse gases.

Concerns:

- The ruling, one of the last before the Court goes on recess till October, has been widely seen as a setback in America's fight against climate crisis and a blow

to the current administration's efforts to transition to clean fuels.

- It was also criticised as a move that could make it difficult for the government to take the assistance of federal agencies in combating US President Joe Biden's campaign promise of cutting down on fossil fuels and transitioning to clean energy during his tenure.

The ruling:

- In a 6-3 ruling, the Justices of the Supreme Court reined back the EPA's authority to regulate greenhouse gas emissions from existing coal and gas-fired power plants under the Clean Air Act.
- This is the second consequential move, earlier the Court overturned 'Roe v. Wade' which had affirmed the constitutional right to abortion.

West Virginia v Environmental Protection Agency:

- The current case, West Virginia v Environmental Protection Agency, is one of the most important climate change-related cases to appear before the top court in decades.
- The state's core argument was that the unelected bureaucrats of the EPA, a federal agency should not be allowed to pass regulations that could significantly reshape its economy (West Virginia is the second-highest coal-producing state in the US).
- In his opinion, Chief Justice Roberts wrote that "capping carbon dioxide emissions at a level that will force a nationwide transition away from the use of coal to generate electricity may be a sensible 'solution to the crisis of the day'.
- But it is not plausible that Congress gave EPA the authority to adopt on its own such a regulatory scheme in Section 111(d). A decision of such magnitude and consequence rests with Congress itself, or an agency acting pursuant to a clear delegation from that representative body."

Background:

- Enacted in 1963, the Clean Air Act is a landmark law that aimed to enhance public health by limiting air pollution from mobile and stationary sources.
- It also authorised the EPA to establish National Ambient Air Quality Standards to protect public health and public welfare and to regulate emissions of hazardous air pollutants.
- The law was necessitated by the presence of smog and particulates in the air following decades of industrialisation. It is considered a pivotal tool in the US' fight against pollution and, by extension, climate change. Experts agree that the law was largely successful in curbing the number of small particles in the atmosphere.
- However, as the fight against climate change evolved, the attention shifted from the emission of pollutants and ozone to the emission of greenhouse gases like

carbon dioxide and, by extension, the mining and burning of coal.

Regulating coal-burning:

- The politicisation of attempts to regulate coal-burning reached its zenith under the Obama administration, driven by lobbying by fossil fuel moguls and conservative leaders who viewed it as an overreach into the principles of capitalism.
- As attempts to legislate greenhouse gas emissions failed, then-President Barack Obama took to the EPA to push for regulations to ease the transition from coal to cleaner sources of energy like natural gas or fracking which had become cheaper due to technological advancements.
- However, this meant that states which were dependent on coal mining for revenue, job and economic stability (like West Virginia) were forced to pay a price.

The larger challenge:

- Currently, the US government functions by a mix of executive and legislative actions. This means that while certain issues are dealt with by elected representatives in Congress directly by debates and votes, others are handed over to established federal agencies which have the expertise and agility to regulate the issues under their purview.
- For instance, during the coronavirus pandemic, the Centers for Disease Control and Prevention (CDC) was able to spearhead the vaccination efforts in real-time without waiting for Congress to pass laws approving them. This is particularly crucial as lawmaking, as essential as it is, is often time-consuming and bogged down by deal-making and compromises.
- Experts fear that the essence of the new judgment could indicate future challenges to similar efforts to regulate issues by federal agencies.

What's next?

- The Biden administration has three options in front of them.
- First, using ambitious and shrewd executive action to advance carefully targeted emissions-cutting steps. Second, bringing together blue states like California which had challenged Trump's climate rollbacks in court and encouraging them to take action against climate change at state levels.
- The third option is voting in enough progressive Democrats during the midterm elections to gain a clear majority in Congress so that the rollbacks by the conservative arms of Congress and the Supreme Court can be overcome by the passage of laws.

CENTRE DILUTES PENAL RULES IN AIR, WATER POLLUTION AND ECO PROTECTION LAWS

Why in news?

- The Ministry of Environment, Forest and Climate

Change (MoEFCC) has proposed dilution of penal provisions from three key laws;

- Environment Protection Act, 1986,
- Air (prevention and control of pollution) Act, 1986 and
- Water (prevention and control of pollution) Act, 1974.



Why amendments have been introduced?

- The amendments have been introduced as “suggestions were received for decriminalisation of the provisions of the said Acts, in order to weed out the fear of imprisonment for simple violations.”
- For the EPA, failure or contravention or non-compliance of the provisions of EPA would be dealt through imposing penalty through a duly authorised adjudicating officer.
- However, in case of serious violations which leads to grievous injury or loss of life, they shall be covered under the provisions of Indian Penal Code, 1860.

Issues in water & air pollution act:

- Similar notification has been issued for the water and air pollution act as well. Under the water pollution act, the Centre has also said there are different processes in states which create confusion among industries and needs to be universalised across jurisdictions.
- Earlier, under EPA in case of non-compliance, the violator was punishable with imprisonment up to five years or with a fine up to Rs 1 lakh, or with both. If it continued further, an additional fine of up to Rs 5,000 for every day during the default period was levied.
- If the violation continued beyond one year after the date of conviction, the offender was punishable with an imprisonment extending to seven years.

Key amendments:

- The Centre has increased the penalty amount to Rs 5 lakh extended up to Rs 5 crore but has removed the provision of jail term from the first default. The penalty amount for repeated offence would be equivalent to the damage caused. There is imprisonment only after a defaulter fails to pay penalty and additional penalty.
- The MoEFCC has introduced provision in the Acts that any aggrieved party can now approach the National Green Tribunal to appeal against the order passed by any adjudicating officer. Similar changes have been made to the air and water pollution act as well.

Environment Protection Fund':

- A fund namely 'environment protection fund' has been created in which the penalty imposed under the three amended Acts by the adjudicating officer would be deposited. This would be utilised for remittance to the affected parties.
- The amendment said the Centre would prescribe the way the Fund would be administered and the manner in which the money shall be drawn.

Universalising the penal provisions:

- Universalising the penal provisions, the Centre has amended the three acts saying, “the provisions of the Code of Criminal Procedure, 1973, would apply to any search or seizures under section 94 of the said Code.”

What's next?

- The Ministry has opened the amendments for public comments to be submitted by July 21, 2022.
- The series of dilutions come in just two years of MoEFCC facing flak over watering down of several provisions of Environment Impact Assessment, wherein the Centre proposed doing away with public hearing for key infra projects.
- After several environment bodies protested against the move, the deadline for comments was extended and the final EIA is yet to be notified.

SUSTAINABLE USE OF WILD SPECIES CAN MEET NEEDS OF BILLIONS: IPBES 9 REPORT

Why in news?

- A recent report released by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) has stated that about 50,000 wild species globally can meet the needs of billions of people.
- The report is the first of its kind and has been conceived after a period of four years.



Key Findings:

- With about 50,000 wild species used through different practices, including more than 10,000 wild species harvested directly for human food, rural people in developing countries are most at risk from unsustainable use, with lack of complementary alternatives often forcing them to further exploit wild species already at risk.

- About 70 per cent of the world's poor population was directly dependent on wild species.
- One out of five source their food from wild plants, algae and fungi, while 2.4 billion depend on firewood for cooking and around 90 per cent of the 120 million population pursuing fisheries rely on small-scale fishing.

Identities:

- The use of wild species defines identities and livelihoods and also holds cultural significance.
- Certain species have cultural importance as they offer multiple benefits that define tangible and intangible features of people's cultural heritage.
- Helping indigenous and local communities maintain their ability to use wild species sustainably and protecting their cultural practices associated with them would ensure their survival.
- The use of wild species is also a source of culturally meaningful employment for such communities and they have engaged in the trade of wild species and materials since millennia.
- The indigenous people and local communities used local knowledge, practices and spirituality for the sustainable use of wild species.

Five categories of practices used for wild species:

- The assessment shortlisted five categories of practices used for wild species – fishing, gathering, logging, terrestrial animal harvesting which includes hunting and non-extractive practices such as observing.
- The report examined specific uses for each category regarding food, materials, medical benefits, energy, recreational and ceremonial purposes and decorations over the past two decades.
- It indicated the increasing use of wild species but added that its sustained use has been varied.

Example of fisheries:

- Recent global estimates confirm that about 34 per cent of marine wild fish stocks are overfished and 66 per cent are fished within biologically sustainable levels. But within this global picture, there are significant local and contextual variations.
- Countries with robust fisheries management had seen stocks increasing in abundance. The Atlantic bluefin tuna population, for instance, has been rebuilt and is now fished within sustainable levels.
- In countries and regions with low intensity fisheries management measures, the status of stocks was often poorly known. But it was generally believed to be below the abundance that would maximise sustainable food production.
- Many small-scale fisheries are unsustainable or only partially sustainable, especially in Africa for both inland and marine fisheries and in Asia, Latin America and Europe for coastal fisheries.

Concerns:

- It presented concerns of effective regulations without which the unsustainable use and trade would increase, leading to population collapse.
- It also cited illegal use and illegal trade in wild species which is estimated to be about \$199 billion (Rs 150,000,000 lakh).

Way Forward:

- The characteristics like integration of diverse value systems, equitable distribution of costs and benefits, changes in cultural norms and social values and effective institutions and governance systems would facilitate the sustainable use of wild species in future.
- It stressed that the sustainable use of wild species needed "constant negotiation and adaptive management" along with a common understanding of "sustainable use".

FOREST LANDSCAPE RESTORATION

Context:

- India celebrates Van Mahotsav or the Forest Festival in the first week of July every year. As part of the annual tree-planting festival, thousands of trees are planted all over the country by different stakeholders from government organisations, civic bodies to individuals.
- The objective behind celebrating Van Mahotsav is to keep local people involved in plantation drives and spread environmental awareness.

Background:

- The history of Van Mahotsav Day goes back to July 1947, when it was first organised by the Punjabi botanist, M.S. Randhawa.
- Subsequently, in 1950, Kanaiyalal Maneklal Munshi, an environmentalist and Union Minister of Agriculture and Food, expanded its reach and national scope.

Forests, a need:

- In today's world, forests need to be celebrated more than ever before.
- According to the International Union for Conservation of Nature (IUCN), deforestation and forest degradation contribute around 12% of global greenhouse gas emissions. The total area occupied by primary forests in India has decreased by 3.6%.



Forest landscape restoration:

- Typically, governments have relied on afforestation and reforestation as a means of establishing trees on

non-treed land. These strategies have now evolved. The focus is now on forest landscape restoration, the process of regaining ecological functionality and improving human welfare across deforested or degraded forest landscapes.

- This approach keeps in mind multiple land uses and people's needs in the short and long terms. Forest landscape restoration seeks to involve communities in the process of designing and executing mutually advantageous interventions for the upgradation of landscapes.
- Nearly two billion hectares of degraded land in the world (and 140 million hectares in India) have scope for potential restoration as forest land.

Diverse species:

- A crucial aspect of this process is to ensure the diversity of the species while planting trees. Natural forests with diverse native tree species are more efficient in sequestering carbon than monoculture tree plantations.
- Planting diverse species is also healthier for local communities and their livelihoods. An international study found that diversifying species in forest plantations has a positive impact on the quality of the forests.
- In Punjab, for instance, the community is proactively planting native species such as Jhand (Prosopis cineraria), Desi Kikar (Acacia nilotica) and Pharwan (Tamarixaphylla), which are resilient and acclimatised. And most of these saplings have a high survival rate of 90%, a vital requirement for sustainable reforestation activities.

A pivotal role:

- Tree planting comes with varied environmental and ecological benefits. Forests are integral in regulating ecosystems, influencing the carbon cycle and mitigating the effects of climate change.
- Annually, forests absorb roughly 2.6 billion tonnes of carbon dioxide. This absorption includes nearly 33% of the carbon dioxide released from burning fossil fuels.

Human dimension:

- But beyond the environmental benefits, there is the human dimension that is at the front and centre. Millions of lives and livelihoods are intertwined with our forests. Forests are a boon for local communities and their livelihoods by functioning as a resource base for goods and services. India is an agrarian economy.
- The forest ecosystems enrich soil fertility and water availability, enhancing agricultural productivity, and in turn the rural economy. Tree planting prevents erosion and stems flooding.
- Sustainable forest crops reduce food insecurity and empower women, allowing them to gain access to more nutritional diets and new income streams.

- Agroforestry lessens rural-to-urban migration and contributes to an increase in resources and household income. Planting trees is deeply linked to the 'wholistic' well-being of all individuals, the community, and the planet.

India and programmes:

- The span 2021-2030 is the UN Decade on Ecosystem Restoration, emphasising efforts to restore degraded terrestrial ecosystems including forests.

Bonn Challenge:

- In 2011, the Bonn Challenge was launched with a global goal to restore 150 million hectares of degraded and deforested landscapes by 2020 and 350 million hectares by 2030.
- India joined the Bonn Challenge in 2015, pledging to restore 26 million hectares of degraded and deforested land by 2030. An additional carbon sink of 2.5 billion-3 billion tonnes of carbon dioxide equivalent through forest and tree cover is to be created by 2030.

Indian Govt. interventions:

- There are a myriad government programmes such as Compensatory Afforestation, the National Afforestation Programme, the National Mission for a Green India (Green India Mission), the Nagar Van scheme and the Forest Fire Prevention and Management Scheme to name a few.
- There is a spotlight on youth via the Green Skill Development Programme for youth who aspire to attain employment in the environment and forest sectors.
- State governments are not far behind either, a case in point being Telangana, which has initiated a large-scale tree planting programme called 'TelanganakuHaritha Haram'.
- However, forest restoration in India faces hurdles in terms of the identification of areas for restoration, a lack of importance accorded to research and scientific strategies in tree planting, stakeholders' conflicts of interest, and financing.

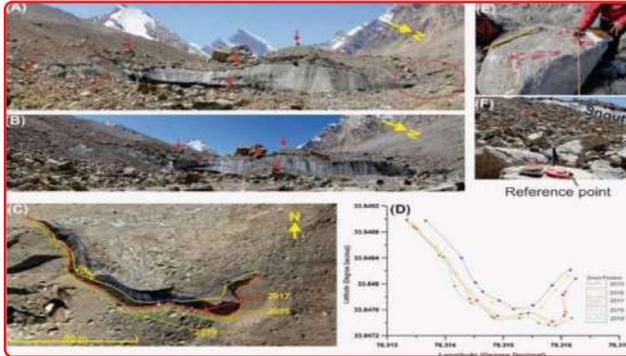
Way Forward:

- To be successful, forest landscape restoration must be implemented proactively, bolstering landscapes and forest ecosystems to be durable and adjustable in the face of future challenges and societal needs.
- It also needs the involvement and the alignment of a host of stakeholders including the community, champions, government and landowners.
- The restoration of natural forest ecosystems can be strengthened through participatory governance by engaging stakeholders.
- Vulnerable forest-dependent communities should be factored in, and any effort should be tailored to the local socio-economic context and landscape history of a region.

LADAKH'S GLACIERS THREATENED BY GROWING VEHICULAR EMISSIONS, SAYS STUDY

Why in news?

- The decadal pace at which glaciers are receding in Ladakh's Drass region, indicates a grave threat to Himalayan glaciers.
- A recent study attributes this to the growing vehicular traffic in the region, which is also witnessing a massive build-up of military on both the sides of Line of Actual Control (LAC) since 2020.



Basis of study:

- The study is based on satellite images of 77 glaciers observed over two decades, from 2000 to 2020, in the Drass basin of western Himalaya. The glaciers studied ranged in size from 0.27 sq. km. to 14.01 sq. km, with an average size of 2.30 sq. km.
- The study reports that the glacier area decreased from 176.77 sq. km. in 2000 to 171.46 sq. km. in 2020, which is about 3% of the total glacier area.

Key Highlights:

- The glaciers at lower elevations receded by 4.10% whereas glaciers at mid- and higher elevations receded by 3.23% and 1.46% over the period observed.
- The heavy vehicular movement is the main cause for the rapid pace at which glaciers are receding in the region.
- The study points out that 17 glaciers situated close to the national highway showed higher glacier shrinkage (4.11%) and snout retreat (209 m) than the glaciers situated further away from the national highway, numbering 60, with glacier shrinkage (2.82%) and snout retreat (148 m).

Black carbon concentration:

- Black carbon concentration ranged from 287 to 3,726 nanograms per cubic metre, with an average of 1,518 nanograms per cubic metre, "which is markedly higher compared to the black carbon concentration reported from other high-altitude locations in the Hindu Kush Himalayas.
- From 1980 to 2020, black carbon concentration has increased significantly from 338 nanogram per cubic

meter in 1984 to 634 nano gram per cubic meter in 2020.

- It is inferred that the increasing black carbon concentration, due to the proximity to the national highway (NH), has significantly affected the glacier health.

Conclusion:

- It is feared that if the observed trends of the climate change continue in the future due to increased greenhouse gas emissions and increase in black carbon concentration and other anthropogenic pollutants, glaciers in the Himalaya may disappear entirely, having a significant impact on regional water supplies, hydrological processes, ecosystem services and transboundary water sharing.

ALTERING GREEN LAWS

Why in news?

- On July 1, the Ministry of Environment, Forest and Climate Change, proposed amendments in the Environment (Protection) Act, 1986.
- The EPA establishes the "framework for studying, planning, and implementing long-term requirements of environmental safety and laying down a system of speedy and adequate response to situations threatening the environment."
- Besides changes in the EPA, the Ministry, in a set of notifications, also proposed amendments to three other legislations.



What are the Environment Ministry's proposed amendments?

- The Environment Ministry has proposed amendments in four key legislations:
 - a) The Environment (Protection) Act, 1986,
 - b) the Water (Prevention and Control of Pollution) Act, 1974,
 - c) the Air (Prevention and Control of Pollution) Act, 1981 and
 - d) the Public Liability Insurance (PLI) Act, 1991.
- These are the cornerstone environmental laws that led to the setting up of the Central Pollution Control Board (CPCB), empowering it to take action against individuals and corporate bodies who pollute air, water and land.

- ⇒ They clutch of laws currently empowers the CPCB to either shut down a polluting industrial body or imprison executives of an organisation found to be environmental violators.
- ⇒ With a set of amendments, the Environment Ministry proposes to modify provisions of the Environment Protection Act (EPA), by replacing clauses that provides for imprisonment with ones that only requires violators to pay a fine. These, however, don't apply to violations that cause grave injury or loss of life.

How will violators be punished?

- ⇒ Currently the violators face imprisonment up to five years or a fine up to ₹1 lakh or both.
- ⇒ If the violations continue, an additional fine of up to ₹5,000 for every day during which such failure or contravention continues after the conviction may be levied. There's also a provision for the jail term to extend to seven years.
- ⇒ The changes proposed include the appointment of an 'adjudication officer' who will decide on the penalty in cases of environmental violations such as reports not being submitted or information not provided when demanded.
- ⇒ Funds collected as penalties would be accrued in an "Environmental Protection Fund."
- ⇒ In case of contraventions of the Act, the penalties could extend to anywhere from five lakh to five crore, the proposal notes, but the clause on provision of a jail term for the first default has been sought to be removed.

Do these amendments defang environment laws?

- ⇒ The Environment Ministry hasn't laid out a clear rationale on why these amendments were necessary. However, the history of environmental action and its success in India shows that the current laws have had limited effectiveness.
- ⇒ An analysis by the Centre for Science and Environment found that Indian courts took between 9-33 years to clear a backlog of cases for environmental violations.
- ⇒ Beginning 2018, close to 45,000 cases were pending for trial and another 35,000 cases were added in that year. More than 90% of the cases were pending for trial in five of the seven environment laws.

Positive aspect:

- ⇒ Many challenges dogged the process of bringing violators to book. For instance, to flag pollution from an industrial unit would mean filing a complaint with the court of the concerned district magistrate, or furnishing evidence to the CPCB which would again have to approach the same institution.
- ⇒ This would then box the crime in the category of 'criminal complaints' that would have to follow a set procedure and was extremely time-consuming.
- ⇒ In most cases, it was practically impossible to hold a specific individual in an organisation responsible for

a specific crime given the burden of proof required. No top executive in India had gone to jail for an environmental crime. This was different from cases of crimes such as poaching, or stealing forest produce, where there was always a definite offender who could be apprehended and dealt with by the police.

- ⇒ The new amendments, thus, potentially made a certain category of crimes 'civil crimes' making it easier to hold organisations accountable.

Criticism:

- ⇒ The existing clause of imprisonment was to deter violators and not to imprison them.
- ⇒ The proposed penalties were too meagre and the amendments opened up avenues for "large scale corruption" as the 'Adjudication Officers' could be "arbitrary" in their decision-making.

GREEN TECHNOLOGY & MARINE BIODIVERSITY

Why in news?

- ⇒ A new study has flagged emerging threats that could have a major impact on marine biodiversity over the next 5-10 years.
- ⇒ The study also speaks about the negative impacts of green technology adoption that must not be ignored. A technique called 'horizon scanning' was used to arrive at conclusions.



Green technology impact:

- ⇒ With increased public pressure against marine plastic pollution, there has been an attempt to replace fossil fuel-based plastic with biodegradable polymers, such the 'biodegradable plastic bags' made of plant starches.
- ⇒ However, the researchers claim that these materials do not biodegrade under natural conditions in the ocean and their widespread adoption can cause marine litter as well.
- ⇒ Since their long term impact on the environment remains unknown, they can lead to a fresh set of problems.

Demand for Lithium:

- ⇒ The researchers argue that the growing demand for renewable energy technology, such as lithium batteries for electric cars, also pose a potential threat to marine ecology.

- Deep sea 'brine pools' of more saline water, contain higher concentrations of lithium and could become future sites for extraction.
- The study finds that these ecosystems support diverse species, many of which are largely undiscovered. A rising demand for lithium-powered electric vehicles could put these environments at risk.

Other challenges:

- Overfishing has already been recognised as an immediate problem, with the WTO calling for the prohibition of subsidies towards those engaging in fishing of overfished stocks.
- The authors project a greater amount of fishing in deeper sea water, in order to address growing concerns of global food security.
- There are around 10 billion tonnes of small lanternfishes in the mesopelagic zone (a depth of 200m – 1,000m), which are not fit for human consumption but can be sold as food to fish farms, or be used as fertiliser.
- However, the large-scale harvesting of mesopelagic fish would cause immense environmental damage, because these species act as an ocean pump and remove carbon from the atmosphere.

Horizon scanning:

- It is a technique which seeks to identify novel but poorly known issues that are likely to become important consequences over the next decade.
- This methodology is meant to "primarily act as signposts, putting focus on particular issues and providing support for researchers and practitioners to seek investment in these areas" before they have a major impact.
- It is also an effective way of assembling experts from diverse subject areas to examine common issues and formulate more comprehensive solutions.

Microplastics:

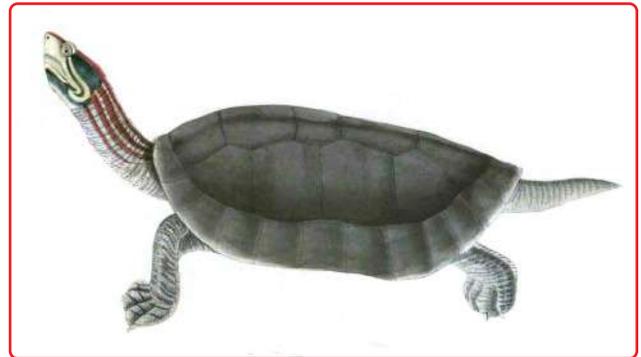
- The horizon scan method has been previously used to identify issues that are now known to have universal environmental impact.
- A scan from 2009 gave an early warning about the danger that microplastics (tiny plastic debris smaller than 5 mm) pose to marine environments. Since then, countries such as the US and UK have banned cosmetics from containing microbeads.

INDIA FOR ADDITION OF RED-CROWNED ROOFED TURTLE TO CITES APPENDIX I

Why in news?

- Recently, India has submitted a proposal to the United Nation Convention on International Trade in Endangered Species on Wild Fauna and Flora for addition of Batagur Kachuga species to Appendix I from current Appendix II.

- With illegal global pet trade, habitat loss and hydrological projects threatening the existence of already endangered Red-crowned Roofed Turtle (Batagur Kachuga) found in Ganga lowlands and Bangladesh.



CITES:

- India has sent the proposal ahead of the CITES'nineteenth meeting of the Conference of the Parties at Panama City to be held between 14 – 25 November.
- CITES is an international treaty to ensure that trade in wild animals and plants do not threaten their survival.
- CITES has three appendices. Appendix I has species threatened with extinction. Trade in specimens of these species is permitted only in exceptional circumstances.
- Appendix III contains species that are protected in at least one country, which has asked other CITES parties for assistance in controlling trade.

About Batagur Kachuga:

- Batagur Kachuga is protected under Schedule I of the Indian Wildlife (Protection) Act of 1972(amended), according to which endangered species that may only be hunted under exceptional circumstances, under license from both federal and provincial authorities.
- Batagur Kachuga is currently part of Appendix II of CITES that has species not necessarily threatened with extinction, but in which trade must be controlled to avoid utilisation incompatible with their survival.

Threats:

- B. kachuga is or may be affected by trade because live specimens of the species, particularly males, are recorded to have been found in international trade and recent records show that trade is ongoing.
- Due to the ongoing decline in the species' population and continued threats to the species, both of which are expected to continue into the future, any trade in the species will have a detrimental impact on its status.
- It is a large, exploited riverine turtle with selective habitat requirements, slow recruitment (generation time estimated over 25 years) and threatened by exploitation for consumption, international pet trade

due to its brilliant coloration, and systemic impacts on its main river habitat, which have been documented to have caused steep population declines, India submitted in the proposal.

- This species is now only known with certainty to exist in National Chambal Sanctuary, with 50 nests over 100 km.
- It is likely to be extinct now in Bangladesh. As a main river turtle, the species is highly susceptible to major hydrological projects and their impacts on river flow dynamics, nesting beaches, and water pollution.

GRAP GUIDELINES BY COMMISSION FOR AIR QUALITY MANAGEMENT (CAQM)

Context:

- At times, the Air Quality Index (AQI) has indicated 'hazardous' levels of pollution in Delhi. In a bid to tackle the menace of air pollution, the Commission for Air Quality Management (CAQM) has updated a set of anti-air pollution measures called Graded Response Action Plan (GRAP) which will be implemented in Delhi and its vicinity in line with the severity of the situation.
- Released by CAQM, the new restrictions under GRAP will incorporate the air pollution index, which reflects the concentration of pollutants and not just particle matter (PM) 2.5 and 10 that were considered as a trigger to impose the curbs.

Background:

- The Graded Response Action Plan was notified by the Ministry of Environment and Forests in 2017. It is brought into effect every year mid-October when pollution levels in the region starts deteriorating.
- Moreover, all the restrictions under the three most serious levels will be imposed pre-emptively and not after pollution levels have spiked.

Why does Delhi choke every winter?

- In 2021, Delhi was found to be the most polluted city in the world for the fourth consecutive year. In 2021, it saw 14.6 per cent increase in PM2.5 concentrations than 2020.
- Owing to poor air quality, Delhi's city hospitals got more patients with respiratory conditions like asthma, respiratory infections and even heart attacks in 2021.
- Poor air quality is directly associated with respiratory problems as deficit in lung function and growth in children.
- A new study conducted by Energy Policy Institute at the University of Chicago revealed that life expectancy in Delhi is being reduced by 9.7 years due to air pollution.

Factors responsible for pollution in Delhi:

- A range of urban factors along with stubble burning by farmers in neighbouring regions contribute to the

increasing pollution levels in the national capital. However, the Supreme Court in 2021 said that stubble burning is only partly responsible for pollution in Delhi.

- The weather plays a key role in increasing pollution levels. Delhi and its neighbouring cities encounter a phenomenon called winter inversion, which results in low wind speeds and combined with a dip in temperature pollutants are brought closer to the ground.
- Other contributors include construction activities, harmful pollutants emitted by industries as well as the use of fireworks during Diwali which usually falls just before winter arrives in Delhi.

What do the new GRAP guidelines say?

- GRAP for the National Capital Region (NCR) has now been classified under four stages based on the severity of air pollution: Stage I- 'Poor' (AQI 201-300), Stage II- 'Very Poor' (AQI 301-400), Stage III- 'Severe' (AQI 401-450) and Stage IV- 'Severe Plus' (AQI over 450).
- Before revising GRAP, the categories were 'Good' (AQI 0-50), 'Satisfactory' (AQI 51-100), 'Moderate' (AQI 101-200), 'Poor' (AQI 201-300), 'Very Poor' (AQI 301-400) and 'Severe' (AQI more than 401).

| CATEGORY | ACTION PLAN |
|--|---|
| <p>Moderate to Poor</p> <p>PM2.5 – 61-120 µg/m3 PM10 – 101-350 µg/m3</p> | <ul style="list-style-type: none"> ➤ Stop garbage burning, impose heavy fines ➤ Enforce pollution regulations in all industries ➤ Do periodic mechanised road sweeping ➤ Stop plying of visibly polluting vehicles ➤ Enforce SC order on diversion, ban on crackers ➤ Ensure fly ash ponds are watered every alternate day from Mar - May ➤ Use apps to inform people and register complaints  |
| <p>Very Poor</p> <p>PM2.5 – 121-250 µg/m3 PM10 – 351-430 µg/m3</p> | <ul style="list-style-type: none"> ➤ Stop use of diesel gensets ➤ Enhance parking fee by 3-4 times ➤ Increase bus and Metro services ➤ Stop use of coal/firewood in hotels and restaurants ➤ RWAs to provide electric heaters to security staff to stop bonfires ➤ Issue media alerts and advisories  |
| <p>Severe</p> <p>PM2.5 – 250 µg/m3 PM10 – 430 µg/m3</p> | <ul style="list-style-type: none"> ➤ Close hot mix plants, stone crushers ➤ Shut down Badarpur power plant and maximise generation from natural gas-based plants ➤ Intensify public transport ➤ Mechanised cleaning of road and sprinkling of water  |
| <p>Emergency</p> <p>PM2.5 – 300 µg/m3 PM10 – 500 µg/m3 (persist for 48 hours or more)</p> | <ul style="list-style-type: none"> ➤ Stop entry of trucks except those carrying essential commodities ➤ Stop construction ➤ Introduce odd-even scheme without exemptions ➤ Task Force to decide on additional steps   |

Measures:

- Under the new policy, measures such as ban on entry of trucks and construction activities will be implemented based on the early warning given by forecasting system.
- The revised GRAP measures call for an embargo on entry of trucks and heavy goods vehicles, except those carrying essential commodities, under the 'Severe Plus' (Stage IV) category or when AQI is more than 450.
- Under 'Stage III', when the situation turns severe, authorities will enforce a ban on construction and

demolition activities, except essential projects like railways, metros, airports and the like. Along with these activities, brick kilns, hot mix plants and stone crushers that don't operate on clean fuels will also be prohibited under this stage.

- A ban on coal and firewood and on diesel generator sets can be imposed under 'Stage I'.
- The policy also said that state governments can consider allowing 50 per cent staff from public, municipal and private offices to work from home and the closure of educational institutions as part of emergency measures.

What do experts say?

- Experts have lauded the revised GRAP. It is believed that by going for pre-emptive actions based on AQI projections the curbs are expected to bring down peak-level of air pollution in Delhi.
- The existing plan had been a failure as the implementation was largely taking place during winter and peak-pollution events, but one needs to ensure this gets implemented throughout the year.
- The pollution levels can cross over 200 even during summers and hence pollution control measures should be implemented in Delhi throughout the year.

KERALA PROTESTING AGAINST SUPREME COURT'S ESZ NOTIFICATION

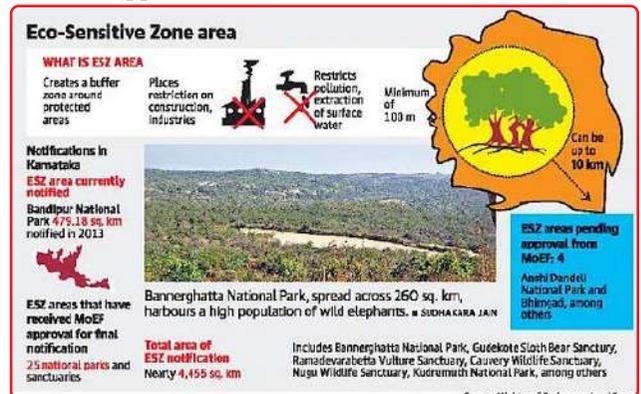
Why in news?

- Recently, the Kerala State Assembly unanimously passed a resolution urging the Central government to exclude the State's human habitations, farmlands and public institutions from the purview of the Ecologically Sensitive Zones (ESZ), recently notified by the Supreme Court, to be set-up around all protected forests in the country.
- The Assembly also called upon the Centre to notify the zones by considering the State government's proposals that marked the ESZ as zero around 10 protected areas of the State, urging the union government to enact laws for the purpose.

Why is the ESZ notification controversial in Kerala?

- The June 3 directive by a three-judge SC to have a mandatory ESZ of minimum one kilometre measured from the demarcated boundary of every protected forest, including the national parks and wildlife sanctuaries, has stirred the hornet's nest in Kerala where any regulatory mechanism on land and land use patterns would have political ramifications.
- The Union Ministry of Environment, Forest and Climate Change had notified the draft ESZs of 20 of the 23 protected areas in the State while issuing the final notification of the Mathikettan Shola National park way back in December 2020.

- However, the draft notification of the Periyar Tiger Reserve is yet to be published though the State government had submitted the proposal earlier, and the State is yet to submit the draft ESZ of Karimpuzha Wildlife Sanctuary, the newest one in Kerala, located in Malappuram district.



Interests of state:

- What worries the State is the possible impact of the apex court's order on its unique landscape. Nearly 30% of Kerala is forested land and the Western Ghats occupies 48% of the State.
- Moreover, there is the network of lakes and canals and wetlands and the 590-kilometres-long coastline, which are all governed by a series of environmental conservation and protection legislations, leaving little space for its 3.5 crore population to occupy.
- With an average population density of 900 persons per square kilometre, much higher than the national average, the demographic pressure on the available land is unusually high in the State, as noted by the State Assembly's resolution.
- The State Government apprehends that the SC's notification may worsen the ground situation as it would adversely impact the interests of the State besides upsetting the lives of millions living near the protected areas.

How did the State's earlier efforts to draft ESZ notifications go?

- Earlier, while preparing the draft ESZ notifications for its protected areas including the Malabar, Idukki, Aralam, Kottiyoor, Shendurney and Wayanad wildlife sanctuaries, the State Government had taken care to exclude the areas with high population density, government and quasi-government institutions, and public institutions from the ambit of the notification.
- The marking of the ESZ for the protected areas that shared the forest boundary with the neighbouring States was a peaceful affair as there were no human habitations in between.
- However, the apex court's recent order has changed the picture and forced the State government to re-look the ESZs of at least 10 protected areas which were earlier marked as zero.

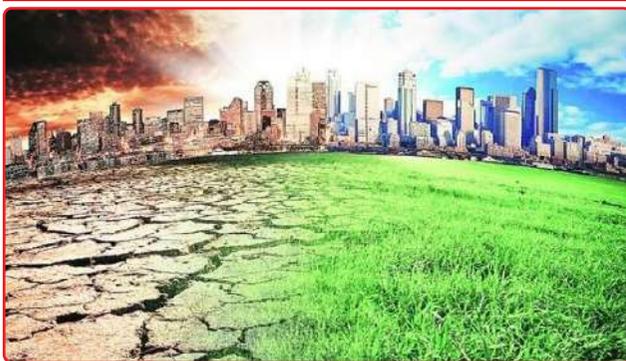
What has been the reaction to the directive?

- The apex court order comes a decade after the Western Ghats Ecology Expert Panel (WGEEP) report, aka Gadgil report, that had radically influenced the socio-political, economic and ecological narratives in the State.
- Though not to the level of the high-pitched public unrest and protests that the State witnessed during the days preceding the WGEEP report, the ESZ notification too has triggered state-wide protests.
- As it occurred during the post WGEEP days, a section of the Church has openly come out against the notification. The Church groups have also demanded the recalling of the apex court order.
- The Kerala Catholic Bishops' Council, a powerful body catering to the special needs of the apostolate in the State, termed the apex court verdict as unfortunate as it feared that the order will upset the lives of thousands of settler farmers and people living on the forest fringes.
- The forum apprehended that the order will effectively turn four lakh acres around the 23 wildlife sanctuaries in the State into buffer zones, thus hitting around 1.5 lakh families.

What next for Kerala?

- Kerala is pinning its hope on the Centre's stand that it was willing to discuss its concerns with the State government.
- The State government has also decided to explore the option of approaching the Central Empowered Committee, as directed by the Supreme Court in its order, to convince the forum of the need to maintain zero ESZ in the areas of human habitation.
- It may also approach the apex court seeking exemption from the one kilometre ESZ regime and to limit it to zero wherever required.

INDIA'S CLIMATE IMPERATIVE



Context:

- In the absence of COVID-19, climate change-induced disasters would have been India's biggest red alert in recent years.
- The heatwave that scorched Rajasthan, Uttar Pradesh, Gujarat, and New Delhi this year; torrential downpours

in south India in 2021; and the super cyclone Amphan that battered West Bengal and Odisha in 2020 are symbols of man-made climate change.

- But India, like elsewhere, still attributes these catastrophes to the wrath of mother nature rather than anthropogenic global warming.

Impact:

- Temperatures over the Indian Ocean have risen by over 1°C since the 1950s, increasing extreme weather events. India is the fourth worst-hit in climate migration. Heat waves in India have claimed an estimated 17,000 lives since the 1970s.
- Labour losses from rising heat, by one estimate, could reach ₹1.6 lakh crore annually if global warming exceeds 2°C, with India among the hardest hit.

Approach:

- India needs a two-part approach:
 - a) to adapt to climate impacts by building resilience against weather extremes
 - b) to mitigate environmental destruction to prevent climate change from becoming more lethal.

Climate resilient agriculture:

- Extreme heat waves hit swathes of India. Heatwaves are aggravated by deforestation and land degradation, which also exacerbate fires. Agriculture, being water-intensive, does not do well in heat wave-prone areas.
- A solution is to promote agricultural practices which are not water-intensive and to support afforestation that has a salutary effect on warming.
- Financial transfers can be targeted to help farmers plant trees and buy equipment, for example, for drip irrigation that reduces heavy water usage. Insurance schemes can transfer some of the risks of extreme heat faced by industrial, construction and agricultural workers to insurers.
- Climate-resilient agriculture calls for diversification, for example, the cultivation of multiple crops on the same farm. There will need to be more localised food production. Weather-based crop insurance would help.

Flood-risk zones:

- Floods and storms are worsened by vast sea ingress and coastline erosion in the low-lying areas in the south. Southern States need stronger guidelines to avoid construction in locations with drainages.
- It is vital to map flood-risk zones to manage vulnerable regions. Environment Impact Assessments must be mandatory for commercial projects.
- Kerala has some flood-resistant houses constructed on pillars.
- Communities can build round-shaped houses, considering optimum aerodynamic orientation to reduce the strength of the winds.
- Roofs with multiple slopes can stand well in strong winds, and central shafts reduce wind pressure on the roof by sucking in air from outside.

Mitigation:

- Adaptation alone will not slow climate damages if the warming of the sea level temperatures is not confronted. Leading emitters, including India, must move away from fossil fuels.
- But climate mitigation everywhere is painfully slow, because of a lack of political will. India has made slow progress in choosing 2070 as its target for net zero emissions.

Roadmap:**Forest coverage:**

- Meanwhile, a big part of climate action lies in protecting and expanding forest coverage. Regulation needs to be tightened and enforced to ensure forest protection while acquiring land.
- India gains from being part of the Glasgow declaration on forest protection that 141 countries signed in 2021.

Management of dams:

- Management of dams can exacerbate glacier lake outbursts and floods. Nearly 295 dams in India are more than 100 years old and need repairs.
- In stemming landslides in Uttarakhand, regulations must stop the building of dams on steep slopes and eco-fragile areas, as well as the dynamiting of hills, sand mining, and quarrying.
- Dams in the southern States can moderate floods, but only if operated year-round to anticipate the need to control flows during floods.

Climate finance:

- India's share in disaster management should be raised to 2.5% of GDP. Climate finance is most suited for large-scale global funding from the World Bank, the International Monetary Fund, and the Asian Development Bank.
- But smaller-scale financing can also be vital: the World Food Programme's funding for Nepal and Bhutan for community-based adaptation and agricultural resilience for vulnerable communities provides an interesting model.

Climate adaptations:

- States can tap into the Union government's resources, financial and technological, from early warning meteorological systems to centrally sponsored climate schemes.
- MGNREGA funds can be used for climate adaptation in agriculture, waste management and livelihoods. States could make compensatory payment to local self-government resources being used for climate adaptation.
- For public pressure to drive climate action, there is need to consider climate catastrophes as largely man-made.

BAT HABITATS IN SOUTH WESTERN GHATS LIE PREDOMINANTLY OUTSIDE PROTECTED AREAS**Why in news?**

- A recent study indicates that more than 50% of habitats suitable for 37 species of bats in the Southern Western Ghats lie outside protected areas.
- It increases threats faced by the animals due to poaching for their meat, habitat loss and stigma from local communities, especially after the COVID-19 pandemic.

Biodiverse regions:

- The authors based their study area around 1,600 km of the Southern Western Ghats, encompassing biodiverse regions in Kerala, Karnataka and Tamil Nadu.
- Six major biodiversity hotspots— Agastyamalai, Periyar Tiger Reserve, Anamalai, the Nilgiris, the Wayanad-Mudumalai complex and Brahmagiri— were part of the study area.
- The Southern Western Ghats was home to rare and endangered bat species such as Salim Ali's fruit bat (*Latidenssalimalii*) and the Pomona roundleaf bat (*Hipposiderospomona*).

Broad distribution ranges:

- Seven of the 37 bat species studied in the region had broad distribution ranges exceeding 20,000 square km, 19 species had intermediate distribution ranges between 10,000 and 20,000 square km, and 11 species were restricted to ranges less than 10,000 square km.
- Worryingly, only two species of bats had a distribution range that was significantly located in protected areas. Meanwhile, the distribution ranges of 35 other species lay primarily outside protected areas.
- Different species had different percentages of their ranges protected: five had less than 10% protection; six had between 10% and 20% protection; 10 had between 20% and 30% protection; 14 had between 30% and 40% protection; and two had between 40% and 50% protection.
- Moreover, potential suitable areas of forest-dependent species were mostly found to be in unprotected areas.

Rising threats:

- While bats like the Salim Ali's fruit bat continued to be hunted for their meat, there have also been reports of people's attitudes towards bats deteriorating since the COVID-19 pandemic due to misplaced concerns of having bat colonies near human settlements.
- People are increasingly coming to believe that the chances of them contracting zoonotic diseases increases due to presence of bats near their houses.
- Identifying these populations of bats outside protected areas could help forest conservation authorities spread awareness among human communities on the importance of bats to ecology and the environment.

Way Forward:

- The study will help local governments and forest departments come up with conservation plans to protect bat species across the Western Ghats.

ENERGY CONSERVATION (AMENDMENT) BILL 2022 AND INDIA'S CLIMATE TARGETS

Why in news?

- In a bid to meet India's commitment to exceed its Paris agreement climate targets, the Centre plans to table the Energy Conservation (Amendment) Bill 2022 in the ongoing Monsoon session of Parliament.
- The Energy Conservation (Amendment) Bill seeks to increase India's demand for renewable energy, thereby reducing the nation's carbon emissions.
- The Bill proposes to amend the Electricity Conservation Act 2001, last amended in 2010, to introduce changes such as incentivising the use of clean energy by issuing carbon saving certificates.

**What does the current Energy Conservation Act say?**

- Currently, the Energy Conservation Act, 2001 (amended in 2010) governs the domain in India.
- The Act empowers the Centre to specify norms and standards of energy efficiency for appliances, industrial equipment and buildings with a connected load over 100 kilo Watts (kW) or a contractual demand of more than 15 kilovolt-amperes (kVA).
- The Act established the Bureau of Energy Efficiency. The 2010 amendment extended the tenure of the

Director General of the Bureau of Energy Efficiency from three to five years.

- This Bureau can specify qualifications required for energy auditors who monitor and review the power consumption of various industries. The Bureau, which falls under the Central government, appoints its own officers and staff.

Key provisions:

- According to the Act, the Centre can issue energy savings certificates to those industries which consume less than their maximum allotted energy. However, this certificate can be sold to customers who consume higher than their maximum allowed energy threshold, providing for a framework for energy trading.
- The Act allows the Centre to prohibit the manufacture, sale, purchase or import of any particular equipment unless it conforms to specified norms issued six months/ one year before.
- In case of any violations under this Act, each offence shall attract a penalty of Rs ten lakh with an additional penalty of Rs. 10,000 for each day the offence continues.
- Consumers who utilize excess energy will be penalized according to their excess consumption. Any appeals against any such order passed by the Central or state government will be heard by the appellate tribunal already established under the Electricity Act, 2003.

What are the proposed changes?

- On October 30, 2021, the Power Ministry issued a statement proposing changes to the Act to enhance the demand for renewable energy at the consumer end, for industries, buildings, transport etc.
- After four consultation meetings with stakeholders, Union Power Minister proposed the following amendments to the Act:
 - Defining the minimum share of renewable energy to be consumed by industrial units or any establishment. This consumption may be done directly from a renewable energy source or indirectly via the power grid.
 - Incentivising efforts to use clean energy by issuing carbon saving certificates
 - Strengthening institutions set up originally under the Act, such as the Bureau of Energy Efficiency
 - Facilitating the promotion of green Hydrogen as an alternative to the fossil fuels used by industries
 - Considering additional incentives like carbon credits for the use of clean energy to lure the private sector to climate action.
 - Including larger residential buildings under energy conservation standards to promote sustainable habitats. Currently, only large industries and their buildings come under the ambit of the Act.

Objectives:

- The main objective of these proposed amendments is to reduce India's power consumption via fossil fuels

and thereby minimize the nation's carbon footprint. The Centre aims to develop India's Carbon market and boost the adoption of clean technology.

- ⇒ India aims to meet its Nationally Determined Contributions (NDCs), as mentioned in the Paris Climate Agreement, before its 2030 target date.

What are India's climate change commitments?

- ⇒ Commitments at Paris Climate Agreement:
- ⇒ India has committed to reducing the carbon intensity of its economy by 33-35 per cent by 2030 from its 2005 levels as part of its NDCs under the Paris Climate Agreement.
- ⇒ The nation has also promised to achieve over 40 per cent of its power generation from non-fossil-fuel energy resources by 2030.
- ⇒ In a bid to reduce its CO₂ emissions to 550 metric tonnes (Mt) by 2030, India has committed to creating an additional carbon sink for 2.5 -3 billion tonnes of CO₂ by increasing its tree and forest cover.

Commitments at COP26 Summit:

- ⇒ However, with Prime Minister expressing confidence that India will meet its climate targets before 2030, he revised India's NDCs at the COP26 Summit held in Glasgow on November 1, 2021. India's five new climate targets are:
 - a) To increase its non-fossil energy capacity to 500 GW by 2030
 - b) To meet 50 per cent of India's power demand via renewable energy sources
 - c) To reduce the carbon intensity of the Indian economy by 45 per cent
 - d) To reduce India's total projected carbon emissions by one billion tonnes from 2021 to 2030
 - e) To achieve a target net zero (for carbon emissions) by 2070

What are the provisions for climate action in the 2022-23 Budget?

On February 1, 2022, Union Finance Minister announced a slew of measures to reduce India's carbon footprint. These include:

- ⇒ Allocation of Rs 19,500 crores to facilitate domestic solar manufacturing
- ⇒ Use of 5-7 per cent biomass pellets for co-firing in thermal power plants
- ⇒ Avoid stubble burning in agricultural fields
- ⇒ To promote blending of fuel, an additional differential excise duty of Rs 2/litre to be levied on unblended fuel.
- ⇒ To achieve clean transport, a new battery swapping policy to be formulated for electric vehicles
- ⇒ Issue 'Green Bonds', fixed-income financial methods to fund projects with positive environmental effects to raise capital for green infrastructure. Such sovereign green bonds can be used in climate adaptation projects which lack private funding.

INTERNATIONAL TIGER DAY 2022



Why in news?

- ⇒ International Tiger Day is observed every year all over the world on July 29.
- ⇒ The day seeks to protect and expand tiger habitats apart from preserving these species.

Theme:

- ⇒ The Theme for International Tiger Day 2022 theme for is "India launches Project Tiger to revive the tiger population".

Background:

- ⇒ International Tiger Day was introduced in 2010 after it was discovered that 97 percent of tigers had disappeared in the past century, with only about 3,000 remaining.
- ⇒ Since tigers were on the verge of extinction, a number of countries signed an agreement at the Saint Petersburg Tiger Summit in Russia to prevent the situation from worsening.
- ⇒ The current wild cat population is 3,900, according to the WWF. India is home to nearly 70% of the world's tiger population.

Extinct in three countries:

- ⇒ The International Union for the Conservation of Nature (IUCN) recently confirmed that the tiger has gone extinct in Cambodia, Laos and Vietnam. The reasons, according to tiger experts, are poaching and habitat loss.

Increase in tiger numbers in India:

- ⇒ India is now reporting increased tiger numbers, and a recent International Union for Conservation of Nature assessment suggests that tiger numbers have increased by 40% since 2005. This is cause for celebration. But is the rise in tiger numbers enough to prevent their extinction?

Genetics and connectivity:

- ⇒ Decades of research in ecology and evolution suggest that numbers are critical to avoid extinction. Populations that are smaller than 100 breeding individuals have a high probability of extinction.
- ⇒ At the same time, for populations to persist, they should be part of larger landscapes with other such

populations that are connected. Small and isolated populations face a high probability of extinction. This is because small populations are subject to chance/random events. These chance events may cause them to lose advantageous genetic variants, while other, detrimental genetic variants might increase in frequency. This process is called genetic drift.

- Also, individuals in small populations are more likely to be related, leading to inbreeding. This exposes the many slightly disadvantageous genetic variants that are present in all genomes. When expressed together, these detrimental genetic variants cause inbreeding depression, and reduced survival and reproduction of inbred individuals.
- A closer look at the distribution of tigers across their range shows that most tiger 'populations' are smaller than 100. On their own, most tiger populations do not have a high chance of survival.

Research findings:

- Sets of tiger reserves that show shared genetic variation are well connected, the inference is that the intervening landscapes facilitate connectivity or movement.
- On the flip side, sets of tiger reserves that share less genetic variation must have barriers or landscapes that impede movement and connectivity.
- Researchers analysed tiger genetic samples in the central Indian tiger landscape and investigated genetic sharing between populations. Most land-use types were not too bad for tiger connectivity, including agricultural fields. However, the presence of built-up areas and high traffic roads greatly impeded tiger movement.
- The results showed that extinction could be avoided if corridors were safeguarded. What was striking was that fencing tiger reserves and isolating them resulted in high extinction.
- In summary, as long as we manage landscapes outside tiger reserves to allow tiger movement, and protect prey and tigers inside tiger reserves, tigers are sure to survive in landscapes such as central India.

In Similipal and Rajasthan:

- People have always wondered why black tigers were found only in the Similipal tiger reserve in Odisha. Our recent work on pseudo-melanistic or black tigers found in Odisha has demonstrated the genetic effects of isolation. Genome sequences of a litter of zoo tigers that included pseudo-melanistic cubs revealed that a single spelling mistake (or mutation) in a specific gene causes these tigers to look this way.
- Other analyses have suggested that the tigers in Similipal form a small and isolated population. All results pointed to genetic drift, or random events that have led to this genetic variant that causes pseudomelanistic coat colour becoming common only in Similipal.

- On the other side of India, in Rajasthan, genome sequences from wild tigers reveal that individuals in the Ranthambore tiger reserve show inbreeding.
- While researchers do not see adverse effects of inbreeding as yet, individuals are related and carry potentially disadvantageous genetic variants, which might affect the survival and the reproduction of tigers in Ranthambore in future.

Way Forward:

- While we celebrate the recovery of tiger populations only by looking at numbers, we must not lose sight of other factors that are critical to their continued survival, such as connectivity.
- Special attention is needed for populations that are becoming isolated and facing the genetic consequences of such isolation. The future of such populations may depend on genetic rescue or even the introduction of novel genetic variants.
- The novel genome sequencing technology provides an opportunity to understand tigers much better in the context of their conservation. The future of tigers will require a 'dialogue' between such data and management strategies in order to ensure their survival. India is lucky to have so many wild tigers and we must work together to save them.

SOCIAL ISSUES

GOVERNMENT WORRIED ABOUT TEEN PREGNANCIES



Why in news?

- High teenage fertility in some areas remains a cause of concern in India even as the fertility rate has stabilised across the country, the Health Ministry said in its Family Planning Vision-2030 document released.

Factors:

- The participation of men will be encouraged in the family planning programme and that lack of access to contraceptives had been identified as a priority challenge area.
- While multiple factors have been identified that explain low contraceptive use among married

adolescents and young women, two most important factors are child marriage and teenage pregnancy.

Districts with high percentage of teenage pregnancies:

- Over 118 districts reported high percentage of teenage pregnancies and are mostly concentrated in Bihar (19), West Bengal (15), Assam (13), Maharashtra (13), Jharkhand (10), Andhra Pradesh (7), and Tripura (4).
- Additionally, over 44% of the districts in India reported high percentage of women marrying before they reach the age of 18.
- These districts were in the States of Bihar (17), West Bengal (8), Jharkhand (7), Assam (4), two each in Uttar Pradesh, Rajasthan and Maharashtra.
- Coincidentally, these districts also experience low rates of modern contraceptive use.

Population Statistics:

- India is the second largest country in the world. The country's population is expected to continue to grow until mid-century (due to population momentum), however, the population growth will decline substantially.
- India's population has reached 136.3 crore (1.36 billion) and is expected to reach 147.9 crore (1.47 billion) by 2031 and further 152.2 crore (1.52 billion) by 2036.
- Also the adolescent population will reach 22.9 crore (229 million) by 2031 and further 22 crore (220 million) by 2036.
- The youth population in the age-group of 15-24 increased from 23.3 crore (233 million) in 2011 to 25.2 crore (252 million) in 2021 and will now decline to reach at 23.4 crore (234 million) in 2031 and further reach 22.9 crore (229 million) in 2036.

Contraceptive methods:

- The male contraceptive methods were largely limited to condoms. Male sterilisation was at 0.3%. Overall male participation was also determined by perception towards women's contraceptive use.
- The vision also included a plan to use the private sector for providing modern contraceptives. Private sector contributes 45% share of pills and 40% share of condoms.
- For other reversible contraceptives like injectables, the share is 30% and 24% for IUCD.

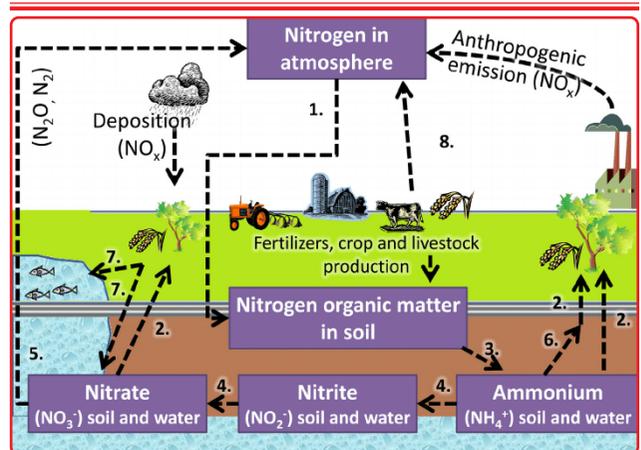
Priority area:

- Although there has been a steady decline in teenage childbearing, from 7.9% in the National Family Health Survey (NFHS-4) to 6.8% (in the NFHS-5) it remains a priority area that requires to be addressed, especially since India will continue to have one of the youngest populations in the world until 2030.
- It added that modern contraceptive use among married adolescents and young women, although increasing over time, has been rather low.

- As per the document in the NFHS-4, only 7% married adolescents and 26% young women were using modern methods of contraception, which increased to 19% and 32% respectively in NFHS-5. Both married adolescent girls and young women reported high unmet need for contraception.
- In the NFHS-4, 27% adolescents and 21% young women reported unmet need for contraception, which declined to 18% and 17% respectively in the NFHS-5.

SCIENCE AND TECHNOLOGY

NEW PATHWAY TO REGULATE NITRATE ABSORPTION IN PLANTS



Why in news?

- Researchers led by those from the National Centre of Biological Sciences, Tata Institute of Fundamental Research, Bengaluru (NCBS-TIFR), have found a new pathway that regulates nitrate absorption in plants.

Crux:

- The gene MADS27, which regulates nitrate absorption, root development and stress tolerance, is activated by the micro-RNA, miR444, therefore offers a way to control these properties of the plant.
- The researchers studied this mechanism in both rice (monocot) and tobacco (dicot) plants.

Role of Nitrogen:

- Nitrogen is one of the most important macronutrients needed for development of a plant. It is a part of chlorophyll, amino acids and nucleic acids, among others.
- It is mostly sourced from the soil where it is mainly absorbed in the form of nitrates and ammonium by the roots.
- Nitrates also play a role in controlling genome-wide gene expression that in turn regulates root system architecture, flowering time, leaf development, etc
- Thus, while a lot of action takes place in the roots to absorb and convert nitrogen into useful nitrates, the absorbed nitrates in turn regulate plant development apart from being useful as a macronutrient.

Nitrate overuse:

- The overuse of nitrates in fertilizers, for instance, can lead to the dumping of nitrates in the soil which leads to accumulation of nitrates in water and soil. This accumulation adds to soil and water pollution and increased contribution to greenhouse gases.
- To avoid this, there should be optimal use of nitrates. Also, since the whole process of nitrate absorption takes place in the roots, a well-developed root system is needed for this to take place optimally.
- At one level, it is known that the hormone auxin is responsible for well-developed roots across all plants. A number of genes are known to help with auxin production, improved nitrate transport and assimilation in plants.

Regulatory switches:

- In addition to this route, several gene regulatory switches that regulate nitrate absorption and root development, such as the micro-RNA, miR444, are known in monocot plants, such as rice.
- The micro-RNA 'miR444' is specific to monocots. When this is not made, its target, MADS27, is produced in higher abundance, and it improves biosynthesis and transport of the hormone auxin, which is key for root development and its branching.
- This regulatory miR444 switch is known to turn off at least five genes called MADS box transcription factor genes.
- The speciality of the MADS box transcription factors is that they function like switch boxes of their own. They bind to their favourite specific DNA sequences and they switch the neighbouring genes "on."

Three-pronged effect:

- The researchers have studied a target gene of miR444 called MADS27, a transcription factor which hasn't been studied well before. They have found that this transcription factor has a three-pronged effect on the plant.
- First, it regulates nitrate absorption by switching "on" proteins involved in this process.
- Second, it leads to better development of the roots by regulating auxin hormone production and transport.
- Finally, and somewhat surprisingly to the researchers, it helps in the abiotic stress tolerance by keeping the main stress player proteins "on."

Way Forward:

- Tinkering MADS27 expression by genome editing is the next step, so that the modified plants are acceptable to use directly.
- The larger goal of this study is to understand how epigenetics plays a role in regulating expression of such important genes.

**Why in news?**

- Researchers in the UK have developed a novel method to break down plastics using just ultraviolet (UV) light.

Details:

- Researchers at the University of Bath discovered that adding sugar units to polymers increases their degradability when exposed to UV radiation.
- UV radiation has a wavelength of 10 nanometres (nm) to 400 nm, shorter than that of visible light, but longer than X-rays.
- Many plastics that bear the biodegradable label can only be composted in industrial settings.

Drawback of PLA usage:

- The public concern about plastic waste has led to the widespread usage of PLA (Poly lactic acid), which a renewable, sustainable alternative to polymers is made from crude oil.
- PLA is used in everything from throwaway cups and teabags to three dimensional (3D) printing and packaging.
- Although PLA is sometimes advertised as biodegradable, it only dissolves under industrial composting conditions of high temperatures and humidity, which are not possible in residential compost heaps.
- It is also not easily degradable in natural environments, such as soil or the ocean.

Findings of the research:

- The research, demonstrated a method that could increase the rate at which these polymers degrade in the environment.
- They found that by adding various quantities of sugar molecules to the polymer, they could modify how quickly the plastic degrades.
- They discovered that incorporating as little as 3% of sugar polymer units into PLA caused it to degrade by 40% in only six hours when exposed to UV light.

Breaking down the plastic:

- The method weakens the plastic, breaking it down into smaller polymer chains that are then more sensitive to hydrolysis.
- This could make the plastic much more biodegradable in the natural environment, for example in the ocean or in a garden compost heap.

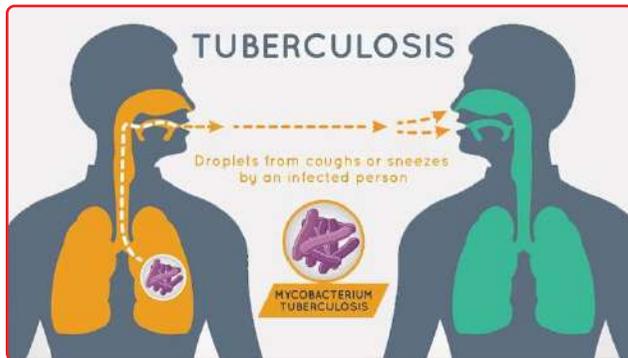
**RESEARCHERS DEVELOP METHOD
THAT MAKES PLASTICS MORE
DEGRADABLE UNDER UV LIGHT**

Way Forward:

- The technology is compatible with existing plastic manufacturing processes, meaning it could potentially be tested and adopted quickly by the plastics industry.
- The findings will be used in the future by the plastics industry to help make plastic waste more degradable at the end of the life of the product.

THE WAY TO CONTROL TUBERCULOSIS**Context:**

- Tuberculosis is the worst among endemic diseases, killing 1.5 million people every year (WHO). TB affects adults in their most productive years and therefore impoverishes the family and the nation.
- In India, the TB capital of the world, the disease kills some 1,400 persons every day. These are gross estimates, for our health management system has no method to count the exact numbers.

**TB control program in India:**

- In the 1950s and '60s, India was the global leader in research in epidemiology, transmission and domiciliary treatment of TB.
- The National TB Control Programme of 1962 was a district-based one with public-private participation. However, upscaling the model proved unsuccessful and the programme failed to control TB.
- After that India began following the WHO under the Revised National TB Control Programme (RNTCP).
- WHO experts, without factoring in the differences between the TB epidemiology of poor and rich countries, used a theoretical construct of TB control to design RNTCP. By 2018, India realized that light at the end of the tunnel was still elusive.

Flaws in the programme:

- There are obvious flaws in the RNTCP. First, for a programme that is heavily funded by the government, there is no prescribed method of monitoring the trajectory of TB control.
- Contrast this with the National AIDS Control Programme. Before the National AIDS Control Organization was established, the Indian Council of Medical Research-managed AIDS Control Task

Force had a unique method of monitoring the control trajectory, popularly called 'sentinel surveillance'.

- Through it, India have data on infection prevalence that can be compared across years, starting from 1986 to date. There was pressure from WHO experts to abandon it, but India continued with its own programme.

Issue of Latent TB in India:

- Second, the assumption that treating pulmonary TB patients alone would control TB was epidemiologically fallacious in India.
- The theoretical principle is 'source reduction'. If one patient is the proximate source of infection and disease to another in the community, early diagnosis and treatment would work as source reduction.
- India is a high-burden country. Large proportions of adults carry TB infection in the lung in a dormant condition for life (latent TB).
- Some among them deteriorate and develop overt TB disease (reactivation TB). HIV infection, diabetes, undernutrition, lung damage due to pollution, tobacco smoking, fall in immune functions due to chronic diseases, alcoholism, etc. accelerate reactivation TB.

People's participation:

- Third, RNTCP has failed to elicit people's partnership in TB control.
- In India's AIDS Control Programme, public education was given high priority. Red ribbon clubs in schools and colleges are its legacy. Without people's informed participation, stigma and delay in seeking help will continue.
- Realising that TB was not under control, WHO called for another programme revision through a World Health Assembly Resolution in 2014 to eliminate TB by 2035.
- Emboldened by the promise of an effective strategy, the Prime Minister announced in 2018 that India would eliminate TB by 2025.

Controlling TB:

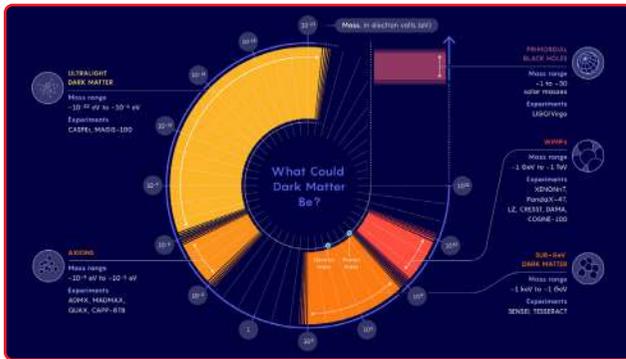
- Epidemiologically, human mastery over microbes includes control, elimination and eradication. Control refers to the reduction of disease burden through specific interventions to a pre-determined level in a pre-stated time period.
- Evidence will have to show that reduction was due to those interventions and not due to a 'secular trend'.
- Diseases that have social determinants tend to decline over time with better housing, nutrition, education and income – this is what a 'secular trend' is. Globally, by this 'secular trend', the burden of TB had been falling by 1% or 1.5% per year.

Way Forward:

- Elimination refers to achieving zero frequency of new cases. As India have a huge backlog of latent TB, it cannot eliminate TB, but must aim for a high level of

control (lowering from 200 per lakh per year to 50 per lakh per year) and document it with measurement. That will do justice to the Prime Minister's vision. High control is achievable as India have major assets by way of the RNTCP. Trained State and District TB officers are already on the job and we have an extensive network of TB clinics and an army of community and field workers. Once the deficiencies listed above are corrected, India can control TB.

THE SEARCH FOR DARK MATTER



Context:

- Many physicists strongly believe that the entire visible part of the universe forms only 5% of all matter in it. They believe the rest is made up of dark matter and dark energy.
- The latest to hit the news in the field of dark matter is a dark matter detector experiment named LUX-ZEPLIN (LZ) in South Dakota in the U.S.

Details:

- As of today this is the most sensitive dark matter detector in the world.
- To give an idea of the degree of difficulty in measuring evidence of a dark particle, it is said that the chamber of this LZ detector, can contain only one gram of dust if it is to detect a dark matter particle.
- This is the extent to which researchers have to go to rule out unwanted signals coming from other entities.

What is dark matter and why is it so elusive?

- All interactions in the universe are a result of four fundamental forces acting on particles – strong nuclear force, weak nuclear force, electromagnetic force and gravitation.
- Dark matter is made up of particles that do not have a charge, which means they do not interact through electromagnetic interactions. So, these are particles that are “dark”, namely because they do not emit light, which is an electromagnetic phenomenon, and “matter” because they possess mass like normal matter and hence interact through gravity.
- Gravitational force, besides not being fully integrated and understood by particle physicists, is extremely weak. For one thing, a particle that interacts so weakly

becomes rather elusive to detect. This is because interactions from other known particles could drown out signals of dark matter particles.

Why do physicists believe strongly that dark matter exists?

- There is strong indirect evidence for dark matter, and this evidence is reflected at various levels (or distance scales, as physicists would explain).
- At the shortest distance scale, consider the rotation of galaxies. If stars are looked at all the way from the centre of any galaxy to its rim, the way the velocities of the observed stars change may be plotted. In the lab this same function may be plotted on a graph by assuming the visible matter is all that exists.
- There is a marked difference between the observed plot of star speeds and the calculated value as you move from the inner part of the galaxy towards its rim.
- Now if it is assumed that there is a certain fraction of matter which exerts a gravitational pull on the rest of the stars in the galaxy, for it cannot be seen in any other way, and recalculate the plot, it fits in with the observed value. This means that there is a definite amount of dark matter in the galaxy.
- One may argue that it is the model that is at fault and there is some other way to reconcile this discrepancy between the calculated and observed value of velocities in rotating galaxies. This is where evidence from other distance scales comes up.

What are the evidences from other distance scales?

- The universe can be observed at various levels – at the level of electrons and nuclei or atoms, or galaxies, or galaxy clusters, or even larger distances where the entire universe can be mapped and studied. Cosmologists, people who study the physics of the universe, typically work in the last mentioned three scales, and particle physicists study the lowest and even smaller scales.

Bullet cluster of galaxies:

- In this context, the second evidence came from observations of the so-called Bullet cluster of galaxies. The Bullet cluster is formed through the merging of two galaxy clusters.
- Physicists found from their calculations that the way these mergers took place could not be fully explained if we believed that the visible universe were all that existed. Therefore, there should be something like dark matter as well as an estimate of how much dark matter there should be in the universe.
- Similar arguments exist from mappings of the universe such as the Sloan Digital Sky Survey and studies of the filamentous nature of the universe at a closer look. While fixing the model could help explain away one of these discrepancies, not all of them can

be explained in the same manner. Hence physicists now take the concept of dark matter very seriously.

What are the candidates for dark matter particles?

- The neutrino would have been an excellent candidate if it had been more massive.
- Other postulated entities include the supersymmetric partner of the Z boson, a particle that mediates the electro-weak interaction.
- Yet other explanations talk about "hidden sector particles" and Axions, a boson and a condensate of dark matter. There are many other theories.
- The search is on to find one of these candidates, for the story is one that spins together gravity, supersymmetry, hidden worlds and is the stuff of which science fiction is made.

NASA RELEASES IMAGES FROM JAMES WEBB SPACE TELESCOPE



Why in news?

- The James Webb Space Telescope began releasing a new wave of cosmic images, heralding a new era of astronomy.
- It revealed the clearest image to date of the early universe, going back 13 billion years.

Details:

- In the latest images, the telescope has revealed stunning details of the Southern Ring planetary nebula that were previously hidden from astronomers.
- The extraordinary images show the last moments of a star as it delivers a final performance of light, gas and dust before bowing out of the universe.

What are nebulae?

- Planetary nebulae are the shells of gas and dust ejected from dying stars. The James Webb Telescope's powerful infrared view brought this nebula's second star into full view, along with exceptional structures created as the stars shaped the gas and dust around them.
- These new details from the late stages of a star's life will help better understand how stars evolve and transform their environments.
- These images also reveal a cache of distant galaxies in the background. Most of the multi-coloured points of light seen here are galaxies not stars.

What happens when a star 'dies'?

- The 'death' means that a star, which is essentially a gigantic hot ball of gases, has run out of its nuclear fuel primarily helium and hydrogen. What happens to the star after it's death depends on its size or mass.

Supernova:

- Bigger stars (at least five times the mass of our sun) collapse on themselves and the outer layers explode in a 'bang', a phenomenon known as 'supernova'. Supernova is the largest explosion known to man.
- After a supernova explosion, a 'neutron star' the collapsed core of the star is left behind. If there's sufficient mass, a black hole is formed.
- A black hole is a spot in space where gravity is so strong that even light cannot escape its pull. The gravity is so strong because matter has been squeezed into a tiny space.

Planetary nebula:

- Smaller stars (like our sun), however, die less dramatically. As their nuclear material (hydrogen) is used up, they expand (instead of collapsing) to become 'red giants'.
- They do this by fusing helium in their cores, before shedding their outer layers, often forming a 'planetary nebula'. The star's core continues to 'live on' as a 'white dwarf', which cools off over billions of years.

The southern ring nebula:

- Two cameras aboard the James Webb Telescope captured the images of the Southern Ring Nebula, formally known as NGC 3132, which is approximately 2,500 light-years away. One light year is approximately 9 trillion km away from the earth.
- The star in the centre of the picture above has been sending out rings of gas and dust for thousands of years in all directions, and the James Webb Space Telescope has revealed for the first time that this star is cloaked in dust.
- The stars and their layers of light are prominent in the new image from Webb's Near-Infrared Camera (NIRCam) on the left, while the image from Webb's Mid-Infrared Instrument (MIRI) on the right shows for the first time that the second star is surrounded by dust. The brighter star is in an earlier stage of its stellar evolution and will probably eject its own planetary nebula in the future.

About James Webb Space Telescope:

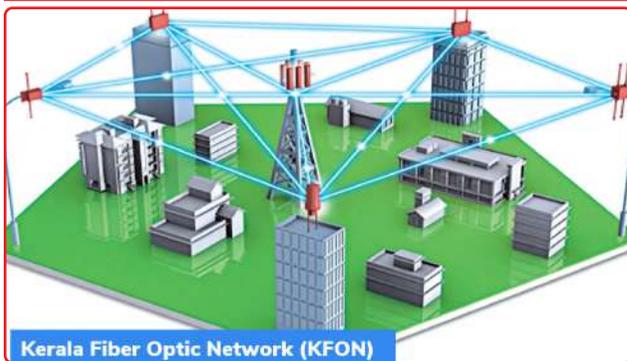
- The NASA led the telescope's development in collaboration with the European Space Agency (ESA) and the Canadian Space Agency (CSA).
- Launched in December 2021 from French Guiana on an Ariane 5 rocket, Webb is orbiting the Sun at a distance of a million miles (1.6 million kilometers) from Earth, in a region of space called the second Lagrange point.

- Here, it remains in a fixed position relative to the Earth and Sun, with minimal fuel required for course corrections.
- Webb's primary mirror is over 21 feet (6.5 meters) wide and is made up of 18 gold-coated mirror segments. Like a camera held in one's hand, the structure must remain as stable as possible to achieve the best shots.
- After the first images, astronomers around the globe will get shares of time on the telescope, with projects selected competitively through a process in which applicants and selectors don't know each other's identities, to minimize bias.

The JWST observatory is equipped with the following instruments:

- Near Infrared Camera (NIRCam)
- Near Infrared Spectrograph (NIRSpec)
- Mid Infrared Instrument (MIRI)
- Fine Guidance Sensors/Near Infrared Imager and Slitless Spectrograph (FGS/NIRISS)

KERALA FIBRE OPTIC NETWORK (KFON)



Why in news?

- Kerala is now the first and only state in the country to have its own internet service.

Details:

- Having received both the Infrastructure Provider and Internet Service Provider (ISP) licenses from the Central government, the Kerala Fibre Optic Network (KFON) is just a few bureaucratic steps away from reaching its beneficiaries.
- The ambitious flagship project was launched on February 15, 2021, aimed to provide Internet connections to 20 lakh below-poverty-line (BPL) households in the State, and ensure universal Internet access and address the problem of digital divide.

What is K-FON?

- KFON Ltd is primarily an infrastructure provider for other ISPs operating in the State.
- Under the project, a venture of equal partnership between Kerala State Information Technology Infrastructure Ltd (KSITIL) and Kerala State Electricity Board (KSEB), 30,000 km of fibre optic cable will be laid connecting all parts of the State.

- The cable is being laid using the existing network of KSEB that has a network capacity of 2 lakh km in the State.
- ISPs can lease the KFON network to provide Internet service to customers across the State at an affordable rate. It will also provide free high-speed Internet connectivity to over 20 lakh financially disadvantaged people, and 30,000 government officers and educational institutions.
- However, KFON will also be offering its own Internet service. Hence the ISP license.

5G Connectivity:

- The initiative also aims to augment the launch of 5G services in the state. At present, 80% of the towers are not fiberised, an issue for the 4G to 5G transition. High-speed wireless connectivity (3G/4G) is limited in rural areas as more telecom towers need to be set-up to provide such services.
- Moreover, the majority of the existing towers are connected via radio, which limits the bandwidth that can be provided to the public.
- KFON is expected to solve this issue by connecting the nearly 8,000+ mobile towers in Kerala and significantly enhance the mobile call quality and accelerate the transition to 5G.

What is the project status?

- As of July 2022, over 80% of the network is already in place and around 26,000 government officers have been connected.
- KFON has shortlisted six ISPs to provide internet connection to 14,000 BPL families. A total of 100 BPL families in each of the State's 140 assembly constituencies are being identified in the first phase through the respective local bodies to provide the free Internet connection.
- Having received the IP-1 license from the Department of Telecommunications (DoT), KFON can lease out, rent out or sell the equipment to other providers.
- The State government has already formed a panel under the Chief Secretary to study possibilities of monetising the network. Moreover, with the ISP license, it can now provide Internet connection as well.

How will KFON operate?

- The network consists of 48 fibres. Out of which, KFON and KSEB will be using roughly half for their own operations. The rest will be leased out to generate money for funding the operational and upgrading costs. The network is expected to incur substantial upgrading costs in the years ahead, especially to increase the capacity.
- Once completed, the state will be divided into four regions and the operators will be selected via an open tender. These selectees will then be provided the required bandwidth at subsidised rates.

- Out of the six shortlisted service providers, the lowest quoted amount is understood to be ₹124 per connection per month, an amount which the government will subsidise for BPL families.

What will be the impact of K-FON impact in Kerala?

- Provided it accomplishes its main objectives to provide high-speed Internet connections to 20 lakh households and 30,000 government institutions across the state, K-FON will contribute substantially to reducing the digital divide and scale-up e-governance in the State.
- It would also make Internet access more affordable as the State Government is effectively subsidising the infrastructure cost for ISPs and cable operators who can provide last mile Internet connectivity, and thus facilitating competition. Further, the extensive fibre optic network is also expected to greatly improve the Internet speed, especially in rural areas.
- All these would in turn help boost economic growth by providing robust digital infrastructure support required for industrial growth, education, healthcare, skill development, smart urban and transport management, and rural engagement via concepts such as smart village.

RING VACCINATION AGAINST MONKEYPOX



Context:

- Experts have called for a revival of the smallpox vaccination programme. It is said that the smallpox vaccine is the best bet to prevent and treat monkeypox.
- There is no plan yet to initiate a vaccination programme against monkeypox, a virus that has infected at least four people across the country, the Centre said.
- At this stage, the focus is on surveillance and it is unlikely that there would be a mass vaccination drive against monkeypox given its low fatality rate and also low transmissibility.

Vaccine options:

- Second and third-generation vaccines against smallpox are believed to be effective against monkeypox and these have never been produced in India.

- There is no capacity in India to produce the second and third generation smallpox vaccines and therefore, it requires technology transfer and international collaboration before these vaccines can be produced in India.

Revival of smallpox vaccination programme:

- The mass vaccination programme for smallpox ended in India around 1979. Those who received smallpox vaccines have 85% protection against monkeypox and the rest will be protected against the severity of the disease.
- It is scientifically proven that different pox viruses provide cross protection against each other. It is against this background that smallpox vaccines are protective against monkeypox.
- Some of the observational studies have indicated that the effectiveness of smallpox vaccines against monkeypox could be around 85%. If that is true, there is every reason to use smallpox vaccines for monkeypox protection.
- The second and the third generation vaccines are recommended to offer protection against monkeypox in India. Vaccines like the MVA-BN and the LC-16 are recommended but India does not have the technology access.

Ring vaccination an effective strategy:

- Unlike Covid-19, vaccination against monkeypox need not be a mass vaccination programme. There has to be targeted vaccination, recommended for those already exposed or at greater risk of getting the virus.
- Monkeypox is currently spreading in men having sex with men and 98-99% of over 17,000 monkeypox cases in current outbreaks globally are male and 1% are female. Usually, the MSM community is close knit and more often they often have multiple sexual partners.
- In the current scenario, vaccinating a "ring" of people around an infected person with the monkeypox virus could be effective in curbing the spread of the disease and especially when there is severe shortage of Smallpox vaccines globally. This is called 'ring vaccination'.

Post-exposure prophylaxis strategy:

- Ring vaccination is a strategy for containment of infectious diseases. The highest risk of the spread of infectious diseases like monkey pox is in close contact of the index cases. So the strategy has to revolve around how to mitigate the risk of contracting the disease, post exposure.
- Experts also say that this has been a successful strategy in diseases like mumps, measles and Ebola, where vaccinating at-risk individuals who had been exposed to the virus in the initial days was useful.

- This is a post-exposure prophylaxis strategy. This strategy would be especially useful in diseases like monkeypox where the incubation period could be as high as 20 days.
- By actively immunising the at-risk, exposed individuals during the early, post-exposure period, their specific immunity against monkey pox builds up during the incubation period of the virus and could result in abating the active infection and breaking the chain of transmission.

Vaccines being used outside India against monkeypox:

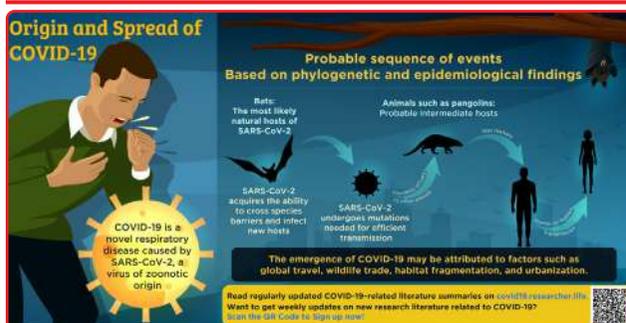
- There are two vaccines that are being used outside of India against monkeypox.
- Both use a virus called Vaccinia that is a relative of monkeypox and the smallpox virus. But it is distinct from them. The immune response generated against this virus offers cross protection against both smallpox and monkey pox.
- The ACAM2000 is a live virus vaccine which is a new generation model of the original DryVax vaccine used for smallpox but it is not recommended for immune suppressed individuals.
- The newer vaccine is called Jynneos in the US, and Imnavex (manufactured by Danish Biotechnology company Bavarian Nordic) in Europe. It is an attenuated (weakened), nonreplicating live virus vaccine.
- The US's Centers for Disease Control and Prevention (CDC) said that this vaccine can be administered to pregnant or immune-suppressed individuals.

- It is important to produce and examine the evidence on this account, as understanding how the virus emerged is perceived as essential to preventing further outbreaks of zoonotic diseases.

What does the Science paper show?

- During the early stages of the COVID-19 pandemic, the dominant hypothesis was that animals sold at the Huanan market were the likely source of the unexplained pneumonia cases. This led to the closure of the Huanan market on January 1, 2020.
- The original theory that the earliest known COVID-19 cases from December 2019, were geographically centered on this market. It shows that live SARS-CoV-2 susceptible mammals were sold at the market in late 2019. The analysis indicated a clear and present link between the market and the emergence and spread of the deadly virus.
- Of the initial 41 people hospitalised with unknown pneumonia by January 2, 2020, 66% had direct exposure to the Huanan Wholesale Seafood Market. These first cases were confirmed to be infected with a novel coronavirus, subsequently named SARS-CoV-2, and were suffering from a disease later called COVID-19.
- These early reports were free from ascertainment bias as they were based on signs and symptoms before the Huanan market was identified as a shared risk factor.
- A systematic review of all cases notified to China's National Notifiable Disease Reporting System by hospitals in Wuhan showed that 55 of 168 of the earliest known COVID-19 cases were associated with this market. However, this alone could not indicate that the pandemic started there.

COVID-19'S ORIGIN



Why in news?

- A recent paper contained a post- facto analysis that the emergence of SARS-CoV-2 occurred via the live wildlife trade in China and established the Huanan market in Wuhan as the epicentre of the pandemic.
- While this is unlikely to seal forever the controversial debate over two years, including counter theories of a lab leak that led to the virus causing havoc in the world, it brings the issue to the first-of-its-kind empirical evidence-based averment and declaration on the origin of the SARS-CoV-2 virus.

What methodology did the authors use?

- While early COVID-19 cases occurred across Wuhan, the majority clustered in central Wuhan near the west bank of the Yangtze River, with a high density of cases near to, and surrounding, the Huanan market.
- In a kernel density estimate (KDE) using the 120 cases with no known linkage to the market, the market remains within the highest density 1% contour.
- Using a COVID-19 assistance app on Sina Weibo, the researchers discovered that unlike early COVID-19 cases, by January and February, many of the sick who sought help resided in highly populated areas of the city, and particularly in areas with a high density of older people.
- The authors considered three categories of cases, and they were all significantly closer to the Huanan market than expected – all cases, cases linked directly to the Huanan market and cases with no evidence of a direct link to the Huanan market.
- They also performed a spatial relative risk analysis to compare December 2019 COVID-19 cases with January-February 2020 cases, reported via Weibo. The Huanan market is located within a well-defined

- area with high case density. No other regions in Wuhan showed a comparable case density.
- A report stated that only lineage B (of the two identified, A and B) sequences had been sampled at the Huanan market. Eleven lineage B cases from December 2019 resided closer than expected to the Huanan market. The authors went on to show that both identified lineage A cases had a geographical connection to the market, supporting the assumption that the virus was spreading outwards of the Huanan market.
 - They reported that multiple plausible intermediate wildlife hosts of SARS-CoV-2 progenitor viruses, including red foxes, hog badgers and common raccoon dogs, were sold live at the Huanan market up until at least November of 2019.

What were the limitations to the study?

- Clearly, events upstream of the market, as well as exact circumstances at the market, remain obscure, highlighting the need for further studies to understand and lower the risk of future pandemics.
- In a post-facto analysis, not having access to the precise latitude and longitude coordinates of all these cases, lacking direct evidence of an intermediate animal infected with a SARS-CoV progenitor virus, and the lack of a line list of early COVID-19 cases are acknowledged as drawbacks.

Way Forward:

- The authors have called for maximum effort to elucidate the upstream events that might have brought SARS-CoV-2 into the Huanan market, culminating in the COVID-19 pandemic.
- To reduce the risk of future pandemics we must understand, and then limit, the routes and opportunities for virus spillover.

CULTURE

PM LAUNCHES YEAR-LONG 125TH BIRTH ANNIVERSARY CELEBRATION OF ALLURI SITARAMA RAJU



Why in news?

- Recently, the Prime Minister launched the year-long 125th birth anniversary celebration of legendary freedom fighter Alluri Sitarama Raju in Bhimavaram, Andhra Pradesh.

Details:

- He unveiled a 30-foot-tall bronze statue of Alluri Sitarama Raju at Bhimavaram in Andhra Pradesh.
- He informed that the 125th birth anniversary of Alluri Sitarama Raju Garu and the 100th anniversary of RampaKranti will be celebrated throughout the year.

Alluri Sitarama Raju:

- Born on 4th July 1897, Alluri Sitarama Raju is remembered for his fight against the British, in order to safeguard the interests of the tribal communities in the Eastern Ghats region.
- He had led the Rampa rebellion, which was launched in 1922. He is referred to as "ManyamVeerudu" (Hero of the Jungles) by the local people.

Struggle against British:

- At a very young age, Raju channelled the discontent of the hill people in Ganjam, Visakhapatnam, and Godavari into a highly effective guerrilla resistance against the British.
- Colonial rule threatened the tribals' traditional podu (shifting) cultivation, as the government sought to secure forest lands. The Forest Act of 1882 banned the collection of minor forest produce such as roots and leaves, and tribal people were forced into labour for the colonial government.
- While the tribals were subjected to exploitation by muttadars, village headmen commissioned by the colonial government to extract rent, the new laws and systems threatened their way of life itself.

Rampa or Manyam Rebellion:

- Strong anti-government sentiment, shared by the muttadars who were aggrieved by the curtailment of their powers by the British, exploded into armed resistance in August 1922.
- Several hundred tribals led by Raju attacked the Chintapalle, Krishnadevipeta and Rajavommangi police stations in the Godavari agency.
- The Rampa or Manyam Rebellion continued in the form of a guerrilla war until May 1924, when Raju, the charismatic 'ManyamVeerudu' or Hero of Jungle, was finally captured and executed.
- The Rampa Rebellion coincided with Mahatma Gandhi's Non-Cooperation Movement.

Presence in culture:

- In 1986, the Indian Postal Department issued a stamp in honour of Raju and his contribution to India's struggle for Independence.
- He has long been a folk hero in the region, and the 1974 Telugu film Alluri Seetarama Raju, featuring actor Krishna, became very popular.

⇒ S SRajamouli's 2022 Telugu blockbuster RRR is a fictional account of the friendship between Raju and tribal leader KomaramBheem, with actor Ram Charan portraying Raju's role.

Political claims:

- ⇒ In July 2019, on the occasion of Raju's 122nd birth anniversary, the government of Y S Jagan Mohan Reddy announced the naming of a district after the legendary freedom fighter, acceding to a long-standing demand of the tribal population of Andhra Pradesh.
- ⇒ The district of Alluri Sitharama Raju came into being on April 4, 2022, made up of Paderu and Rampachodavaram of the existing districts of Visakhapatnam and East Godavari respectively.
- ⇒ These two areas have tribal populations of 10.4 per cent and 4.1 per cent, according to a May 2014 estimate by the Andhra Pradesh government.

PRESERVING ASSAM'S INDIGENOUS CULTURE



Context:

- ⇒ The United Nations Permanent Forum on Indigenous Issues (UNPFII), on its very first session, requested UN to prepare a report on the state of the world's indigenous people (SOWIP).
- ⇒ SOWIP's first publication in 2021 revealed certain alarming data on the state of the indigenous people's poverty, health, education, employment, human rights, environment, among others.

UNDRIP:

- ⇒ On September 2007, the UN General Assembly adopted the Declaration on the Rights of Indigenous People (UNDRIP).
- ⇒ It contains provisions that indigenous people and communities can use to protect and preserve their rights and heritage. As many as 146 countries have adopted the declaration and also have given a commitment to respect the provisions in it.

Culture of Assam:

- ⇒ The indigenous culture of India carries within itself an amalgamation of integration, unification and synthesis of socio-cultural demonstrations belonging to the Mongoloids, Negritos, Australoids and Nordics.

⇒ In the case of Assam, its culture is a result of the continuous exchange of ideas and practices between the Indo-Aryans and the tribals. But with the advent of globalisation and inflow of intra- and inter-nation cultural migration, there has been an adverse effect on the ethnicity of the region.

⇒ The direct outcome of it is the loss of many ethnic practices ranging from festivals to customs to food habits as well as dressing and living standards.

Unity in cultural diversity:

- ⇒ Although Assam consists of many tribes, the major tribes include pre-dominantly Bodo, Karbi, Mising, Sonowal-Kacharis, Deori, Rabha, Dimasa, Tiwa, Tai-Phake, Singpho, Kuki, Khelma and the Tea-tribes.
- ⇒ Each of these tribes are unique in their own ways and, therefore, it is important to know their basic facets, preserve and protect their cultural heritage.

Bodos & Karbis:

- ⇒ Bodos and Karbis depend on agriculture as their primary means of occupation, but the seasonal festivals of Bodos include Baisagu, Domashi and Katrigacha, alongside the religious festival Kherai.
- ⇒ But the main festivals of Karbis include Rongker and HachaKekan.

Misings:

- ⇒ The Misings are another major tribe of Assam who are dependent on agriculture.
- ⇒ The women of this community are known for their weaving art and they celebrate festivals like Ali-Ai-Ligang and Porag.

Sonowal-Kacharis:

- ⇒ The Sonowal-Kacharis have a common belief that nature is still alive with invisible forces, deities and spirits.
- ⇒ The tribe celebrates the three Bihus:Bohag Bihu, Rongali Bihu and Kati Bihu with great fun and gaiety.

Deoris:

- ⇒ The Deoris, on the other hand, speak a Tibeto-Burman language also known as Deori and they celebrate festivals like IbakuBisu, MagiyuBisu and Joydam.
- ⇒ Dance and music are an important part of the lifestyle of rabhas and most of the rituals that they perform are accompanied by dance to please the deity.

Dimasa:

- ⇒ The tribe Dimasa lives on river banks and Bushu is their most important festival.

Tiwas:

- ⇒ The Tiwas speak a Tibeto-Burman language, but the mother tongue of a majority of the tribe is Assamese.
- ⇒ People of the Tiwa tribe are associated with the Gobha kingdom, and the relevance of the Gobha king can be still found in contemporary times in the form of a fair called JunbeelMela.

Kukis:

- Kukis are Tibeto-Burman people who are spread throughout the northeastern states of India.
- An important event in the history of this tribe was the acceptance of Christianity that was influenced by the missionaries.

Tea-tribe:

- The Tea-tribe is also one of the prominent tribes of Assam and they are also known as adivasis.
- They have different dance forms like JumurSanthali, Chhau, Karam and Sambalpuria.

Uniqueness of Assam:

- The famous Chandubi festival, which is regarded as a means to celebrate the rich tribal ethnicity, has lost its essence with the introduction of western culture in the form of food items.
- Similarly, while Assam is known for its indigenous celebration of holi, locally called doulutsav, the Indianised version of La Tomatina and rain dance have affected the traditional practices of holi celebrations to a great extent.
- The tribes of Assam are also unique in their dressing styles and the westernised form of wardrobe changes that our people have embraced has also adversely impacted the traditional attires of the tribes.

Felicitous step:

- Therefore, understanding the importance of preserving and promoting the rich cultural identity of Assam, Chief Minister Himanta Biswa Sarma had a dialogue with the representatives of 30 tribal communities in March 2022.

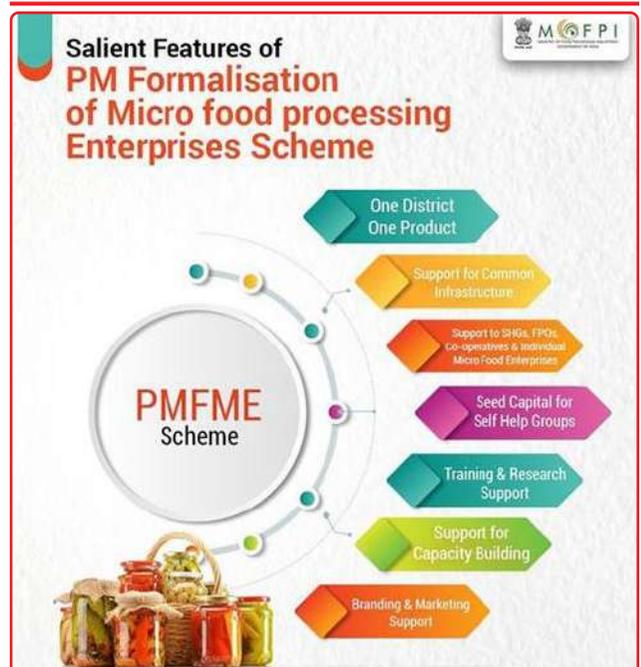
Indigenous and Tribal Faith and Culture Department:

- Earlier, he expressed his desire to introduce a specific department known as Indigenous and Tribal Faith and Culture Department for promoting and preserving the tribal history and heritage.
- Accordingly, after the approval of the Assam Cabinet, the Assam governor ordered July 30, 2021 the introduction of the department with immediate effect. Thus, Assam became the second state in the northeast to introduce such a department.

What needs to be done?

- It first needs to bridge the gap between age-old traditions and customs of Assam and the interest of the younger generation towards it. Only then, can it forward the state's unique culture and tradition at the global level.
- For doing so, the department should focus on recruiting appropriate researchers to extensively study on different tribes of the state. Once the extensive research is completed, the department needs to focus on promoting the unique research details of each tribe by various seminars, exhibitions and practices.

- But the greatest danger the tribal identity of Assam faces is the domination by western influence and that is something the department should administratively handle.
- The department should also timely engage in talks with representatives of each tribe and try to inculcate in them the sense of belongingness alongside other dwellers.

MISCELLANEOUS**PRADHAN MANTRIFORMALISATION OF MICRO FOOD PROCESSING ENTERPRISES (PMFME) SCHEME****Why in news?**

- Recently, the centrally sponsored Pradhan Mantri Formalisation of Micro food processing Enterprises (PMFME) Scheme completed its two years.

About:

- It was launched on 29th June, 2020 by the Ministry of Food Processing Industries, Government of India under the Aatmanirbhar Bharat Abhiyan.
- The PMFME Scheme is currently being implemented in 35 States and Union Territories.
- Under the scheme, the submission process for the applicants to apply for the credit-linked subsidy is done through the online portal.

Digital GIS One District One Product (ODOP):

- The digital GIS One District One Product (ODOP) map of India has been developed to provide details of ODOPs of all the States and UTs.

- The digital map also has indicators for Tribal, SC, ST, aspirational districts and Incubation Centers approved under the PMFME Scheme.
- It will enable stakeholders to make concerted efforts for its value chain development.

Nodal Bank:

- An agreement has been signed with the Union Bank of India as the Nodal Bank for the PMFME Scheme and MoUs have been signed with 15 banks as official lending partners for the scheme.

Capacity Building component:

- Under the Capacity Building component of the scheme, the National Institute of Food Technology Entrepreneurship and Management, Kundli (NIFTEM-K) and the National Institute of Food Technology Entrepreneurship and Management, Thanjavur (NIFTEM-T) have been performing a key role in providing training and research support to food processing enterprises/groups/clusters in partnership with the State Level Technical Institutions and private training partners.
- Training of beneficiaries is being conducted on food product processing including Food Safety & Hygiene and Entrepreneurship Development Programme (EDP).

Marketing support to State-level brands:

- Under the scheme, MoUs have been signed with NAFED and TRIFED to take up the marketing and branding activities for supporting and handholding the beneficiaries along the entire value chain.
- Under the component 10 ODOP Brands in association with NAFED have been launched.
- The scheme also envisages marketing support to State-level brands. As of now, 2 State-level brands have been successfully launched, including the brand "AASNAA" from the State of Punjab and the brand "BHIMTHADI" from the State of Maharashtra and many others in the pipeline.

75 Unique One District One Product (ODOP):

- To commemorate 75 years of India's Independence, under the AzadiKaAmritMahotsav initiative, the Ministry is conducting 75 Unique One District One Product (ODOP) webinars/offline workshops across the country in collaboration with States/UTs and NIFTEM.
- "Kahaani SukshmaUdyamon Ki" a series of success stories is also being published under this initiative wherein the inspiring stories feature the journey of the Micro Enterprises and Self Help Groups in the food processing sector, create awareness about the opportunities in the sector and encourage the existing and aspiring entrepreneurs to take the opportunity of availing the PMFME Scheme benefits to upscale their food processing business.

SAMYUKT KISAN MORCHA ON SANJAY AGRAWAL COMMITTEE



Why in news?

- Recently, the Union Agriculture and Farmers Welfare Ministry formed a committee, as promised by Prime Minister Narendra Modi on November 19, 2021 while announcing the repeal of three controversial farm laws.
- It is headed by former Agriculture Secretary Sanjay Agrawal, to promote zero budget based farming, to change crop pattern keeping in mind the changing needs of the country, and to make MSP (minimum support price) more effective and transparent.

Issue:

- Three slots were kept vacant in the 28-member committee to accommodate nominees of the Samyukt Kisan Morcha (SKM), the umbrella body of about 300 farmers' organisations that spearheaded the protests against the three farm laws.
- With the agenda not mentioning making of a law on MSP, the SKM, rejected the government's offer and said it will not send any of its representatives to the panel.

Why is the farmers' organisation upset?

- Since the repeal of the three laws, the Centre communicated with the SKM on the formation of the panel and sought names.
- In their replies, the SKM wanted to know the terms of reference of the proposed committee, names and details of other organisations and individuals who will be included in the committee, chairman's details and so forth.
- The SKM claims that there were no replies to these queries and called for nationwide protests from July 19, the day the Monsoon session of Parliament began. The SKM says that the Centre hurriedly announced the committee to escape questions in Parliament about the delay.

Concerns:

- The SKM, which faced a minor split recently, is upset that the former Agriculture Secretary is chairman of the panel as he was at the helm when the Centre launched the three farm laws as ordinances.

- ⇒ It also alleges that Niti Aayog member Ramesh Chand, who is also in the panel, was the main advocate of the farm laws. Economists C.S.C. Shekhar and Sukhpal Singh have been against giving legal status to MSP, the SKM argues.
- ⇒ Both factions of the SKM also allege that the five members representing other farmers' associations are either directly associated with the BJP-RSS or support their policies.

What is the government's stand?

- ⇒ According to the Centre, it had not promised the SKM a committee to ensure MSP.
- ⇒ The government had assured the formation of a committee to make MSP more effective and transparent, to promote natural farming and to change crop patterns keeping in mind the changing needs of the country.
- ⇒ Accordingly, a committee has been constituted consisting of representatives of farmers, Central government, State governments, agricultural economists and scientists, etc.

What do the farmers want?

- ⇒ The farmers want legal guarantee of MSP, which should be as per the recommendation of the M.S. Swaminathan formula – C2 (input cost for the farming, including the land value) +50%; withdrawal

of all cases against farmers who participated in protests and the resignation of the Minister of State for Home Affairs Ajay Teni over the LakhimpurKheri incident.

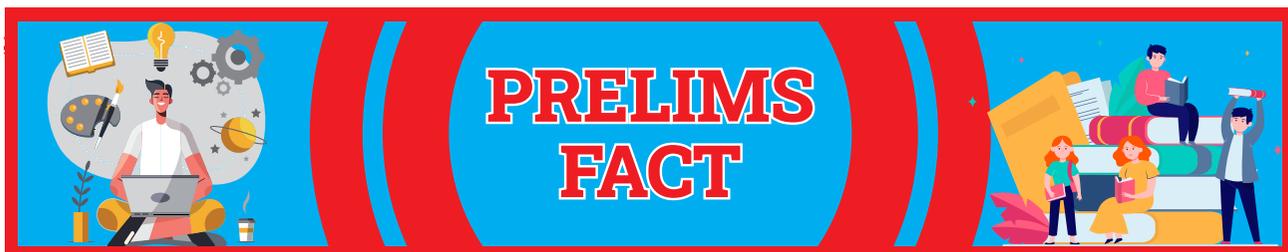
- ⇒ On these demands, the SKM has started nationwide protests for a month from July 19. It also points out that there is no mention of making a law on MSP in the agenda of the committee.

What is the MSP on key crops now?

- ⇒ The government fixes MSPs for 22 mandated agricultural crops and fair and remunerative price (FRP) for sugarcane on the basis of the recommendations of the Commission for Agricultural Costs and Prices (CACP), after considering the views of the State Governments and Central Ministries/ Departments.
- ⇒ The 22 mandated crops (the MSP is for a quintal) include 14 kharif crops, six rabi crops and two commercial crops.

What happens next?

- ⇒ Farmers argue that the MSP is much less than the C2+50% formula. But the Centre says there is substantial improvement in the income of farmers as there is a consistent increase in MSP.
- ⇒ The struggle for the legal guarantee of MSP to ensure fair price for the crop to the farmers will continue.



POLITY AND GOVERNANCE

AMENDMENT TO FOREIGN CONTRIBUTION (REGULATION) ACT (FCRA) RULES 2011

Why in news?

- Recently, the Central government has made seven key amendments to existing rules of the Foreign Contribution (Regulation) Act (FCRA) rules 2011 that aim at prohibiting acceptance and utilization of foreign contribution or foreign hospitality for any activities detrimental to the national interest.
- The new rules, now renamed as Foreign Contribution (Regulation) Amendment Rules, 2022, came into effect on July with the Ministry of Home Affairs (MHA) issuing a notification and its publication in the Official Gazette.
- The new rules are an amendment to the Foreign Contribution (Regulation) Rules, 2011.

Key amendments:

- Among those, there are two amendments in rule 6 by substituting the words 'one lakh rupees' with the words 'ten lakh rupees'; and the words 'thirty days' with the words 'three months'.
- There is also an amendment in rule 9, in sub-rule (1), in clause (e), for the words "fifteen days", the words "forty-five days" shall be substituted; and in sub-rule (2), in clause (e), for the words "fifteen days", the words "forty-five days" shall be substituted.
- Clause (b) of rule 13 has been omitted from the fresh rules; and in rule 17A, for the words "fifteen days", the words "forty-five days" shall be substituted.
- The last amendment is done in rule 20, and it mentions that for the words "on a plain paper", the words "in such form and manner, including in electronic form as may be specified by the Central Government" shall be substituted.

Foreign Contribution (Regulation) Act (FCRA), 2010:

- The Foreign Contribution (Regulation) Act (FCRA), 2010 consolidates the law to regulate the acceptance and utilization of foreign contribution or foreign hospitality by certain individuals or associations or companies and to prohibit acceptance and utilization of foreign contribution or foreign hospitality for any activities detrimental to the national interest and for matters connected therewith or incidental thereto.

- The Act extends across India and also applies to the citizens of India outside India. Associate branches or subsidiaries, outside India, of companies or bodies corporate, registered or incorporated in India also have to follow the rules of the Act.
- The FCRA regulates foreign donations and ensures that such contributions do not adversely affect internal security. First enacted in 1976, it was amended in 2010 when a slew of new measures were adopted to regulate foreign donations.
- The FCRA is applicable to all associations, groups and NGOs which intend to receive foreign donations. It is mandatory for all such NGOs to register themselves under the FCRA.
- Members of the legislature and political parties, government officials, judges and media persons are prohibited from receiving any foreign contribution.

PANEL SUGGESTS INCREASING TENURE OF HOUSE COMMITTEES

Why in news?

- Recently, a Parliamentary panel headed by former General Secretary and advisor P.P.K. Ramacharyulu submitted its report.
- The panel was instituted by Chairman M. Venkaiah Naidu in January 2022.
- The panel, in its extensive report that studied the working of the Rajya Sabha secretariat and other procedural issues, has made 130 recommendations.

Key recommendations:

- There should be a dedicated hour during the Rajya Sabha proceedings to discuss the "import and implications" of the reports finalised by Parliamentary Standing Committees.
- The committee suggested that the tenure of the Parliamentary committees should be increased from the present one year to two years.
- Their field visits should also be increased from the present two visits for a maximum of 10 days in a year to three visits and 15 days.
- The panel said that these reports should be made more accessible to the stakeholders and general public.

Streamlining of the secretarial work:

- The study has suggested streamlining of the secretarial work, including disposing of 75% of the issues by lower and middle level in a 10-layer hierarchy that exists in the secretariat at present.

- The Rajya Sabha secretariat, which started in 1952 with 200 officers and staff, has 1,700 personnel at present.

AMENDMENT TO THE NATIONAL EMBLEM

Why in news?

- The unveiling of the national emblem cast on the roof of the new Parliament building by Prime Minister sparked a huge controversy.

Claims:

- The Modi government is being called out for modifying and 'distorting' the emblem. Many people took to social media platforms to express that the emblem looked different from the original.
- Many came down heavily on the government alleging that, unlike the original, the Ashoka Lions in the new emblem are baring their fangs.

Does the law permit the government to amend the national emblem?

- The ongoing outrage has, however, raised an important question, if the central government, in fact, has the powers to make such modifications or change the state emblem.
- The relevant law to be considered with regard to the state emblem would be the State Emblem of India (Prohibition of Improper Use) Act, 2005, and the State Emblem of India (Regulation of Use) Rules, 2007, which specifically deal with state emblem.

State Emblem of India (Prohibition of Improper Use) Act, 2005:

- The statement of objects and reasons of the 2005 Act states that earlier the use of the State Emblem of India was governed by a set of executive instructions, which did not have any legal sanction, and the Act had to be enacted to prevent the State Emblem's misuse by unauthorised persons.
- According to the 2005 Act, the State Emblem of India is as described and specified in the schedule to be used as an official seal of the government.
- The schedule of the Act states that the State Emblem of India is an adaptation from the Sarnath Lion Capital of Asoka which is preserved and shall conform to the designs as set out in Appendix I or Appendix II.

Power of Centre Govt.

- The question is, when there's a statute that specifically states that the State Emblem should conform to the designs set out in the Act, does the Centre have any powers to make changes to the emblem.
- Section 6(2)(f) of the same Act further provides the Centre with the power 'to do all such things including the specification of design of the emblem.'
- The provision specifically states, "Subject to the provisions of this Act, the central government shall have powers to do all such things (including the specification of design of the emblem and its use in

the manner whatsoever) as the Central Government considers necessary or expedient for the exercise of the foregoing powers."

- Therefore, according to this provision, the government has the power to make changes in the design of the emblem.
- But one needs to note, that it only refers to change in the design and not change of the state emblem itself.

Conclusion:

- There is no emblem set out in the Constitution of India. The emblem design is set out in Appendix I and II of the 2005 Act. Amending the Act, the government can have a new emblem if it so desires.
- If an elected government wants to make certain amendments it can go ahead and do the same, but the constitution as such doesn't have a particular provision of punishment if one does that.

FOUR LABOUR CODES

Why in news?

- The Code on Wages (passed in Parliament in August, 2019), the Industrial Relations Code, the Code on Social Security, and the Code on Occupational Safety, Health and Working Conditions (all passed on September 22 and 23, 2020 in the Lok Sabha and the Rajya Sabha) have not yet been implemented.

Where does it stand?

- The government says the delay in implementation is due to the delay in framing rules by the States.
- As labour is a concurrent subject, both the States and the Centre will have to prepare rules for the codes. The Centre had also offered help to the States so that the codes can be implemented from July 1, 2022.
- Union Minister for Labour, recently said that only a few States have not yet framed the rules. According to a recent report, 24 States have so far published draft rules to all four codes.

What is the process?

- The States are publishing draft rules and inviting comments from stakeholders on those draft rules. The Centre had also published draft rules for certain sections of the four codes.
- The trade unions have been asking the Centre to stop this piecemeal approach and release the complete rules of four codes.
- Since the four labour codes are an amalgamation of 29 Central laws and about 100 State laws that are similar to various Central laws, drafting, publishing and holding consultations with stakeholders is taking considerable time.
- There are also complaints by the Opposition-ruled States that the codes are "poorly drafted".
- The Opposition had objected to the way the three codes were passed in Parliament in just two days without much discussion.

What the Centre wants to do?

- The Centre intends to implement the four codes together.
- The SP Mukherjee committee, which is working towards the issue of minimum wages, is yet to complete its task. Setting a national minimum wage is important in the implementation of the Code on Wages.
- The Centre had recently said that the ambit of Employees State Insurance Corporation (ESIC) will be expanded to all districts within two years.
- Social security for unorganised workers is a promise in the Code on Social Security and expansion of ESIC network is an unavoidable step for this purpose.

What lies ahead?

- The trade unions are warning about more protests if the codes are implemented. They say that the Centre will have to repeal it the way it repealed the three farm laws.
- The Centre, too, is worried about the political fallout of its implementation and thus, this could also be a possible reason for the delay.
- The employers are worried that further increase in the salary bill will hamper their profits in a recession-hit economy and they expect the government to hold more discussions.

ASSAM, ARUNACHAL PRADESH CMS SIGN PACT TO RESOLVE BORDER DISPUTE

Why in news?

- Recently, Assam Chief Minister and his Arunachal Pradesh counterpart signed an agreement to end border issues between the two states and decided to 'restrict' the number of disputed villages to 86 instead of 123.

What is the border issues between Assam & Arunachal Pradesh?

- The two states share an 804.1 km-long border.
- The grievance of Arunachal Pradesh which was made a union territory in 1972 is that several forested tracts in the plains that had traditionally belonged to hill tribal chiefs and communities were unilaterally transferred to Assam.
- After Arunachal Pradesh achieved statehood in 1987, a tripartite committee was appointed which recommended that certain territories be transferred from Assam to Arunachal.
- Assam contested this and the matter is in the Supreme Court.

Way Forward:

- They have decided to restrict the 'disputed villages' to 86 instead of 123.
- They will try to resolve the rest by September 15, 2022.

NCPCR ASKS STATES TO IDENTIFY HOTSPOTS OF STREET CHILDREN

Why in news?

- Recently, the National Commission for Protection of Child Rights (NCPCR) asked states to identify the hotspots of street children and pass on that information to relevant authorities to rehabilitate them.
- The children have been rescued from 75 such hotspots in the last eight months and 270 FIRs have been registered in the matter.

Key Highlights:

- An online portal named 'Tracking Portal for Out of School Children' was also launched.
- The states were asked to appoint nodal officers to provide information regarding the portal to be maintained by the National Commission for Protection of Child Rights (NCPCR).
- Talking about children in street situation (CISS), NCPCR said 25,000 children have been in BalSwaraj's Street Children Portal (CISS) and it is in the process of rehabilitating them.

'Baal Swaraj':

- Baal Swaraj is a portal launched by NCPCR for online tracking and digital real-time monitoring mechanism of children in need of care and protection.
- The portal has two functions- COVID care and Children in Street Situations (CiSS).
- COVID Care link caters to the children who have lost either or both parents due to COVID-19 or otherwise post March 2020.

NCPCR:

- National Commission for Protection of Child Rights (NCPCR) has been constituted by the Government of India, as a statutory body under section 3 of the Commissions for Protection of Child Rights (CPCR) Act, 2005 for dealing with the protection of child rights and related matters.
- Under section 13(1) of the Commissions for Protection of Child Rights (CPCR) Act, 2005, has provided certain functions to ensure that the rights of children are protected especially the most vulnerable and marginalized.
- In addition, the Commission has also been mandated to monitor the implementation of the Juvenile Justice (Care & Protection of Children) Act, 2015, Right of Children to Free & Compulsory Education (RTE) Act, 2009 and Prevention of Children from Sexual Offences Act, 2012.

LEGAL INFORMATION MANAGEMENT & BRIEFING SYSTEM (LIMBS)

Why in news?

- The Ministry of Law and Justice has unveiled a web-based application called LIMBS (Legal Information Management & Briefing System).
- This is an easy-to-use and efficient application will be used for tracking court cases involving the Government of India.

Key features of LIMBS

- Dashboard based platform with advanced data analytics
- Facility of CNR (Case Number Record) number. Now, users can search cases using their CNR numbers.
- Direct integration with websites of various courts through APIs
- Conduct and Supervision of Litigation by DOLA (Department of Land Administration), CAS (Column Address Select or Strobe)/Litigation Sections of High Courts on behalf of Union of India in the Hon'ble Supreme Court, High Courts and Subordinate Courts
- Separate domain to enter and monitor Administrative Mechanism for Resolution of Commercial Disputes
- Supervision of cases, uploading of fee bills of Law Officers, Panel Counsels and advocated is also facilitated

Way Forward:

- It is a cutting-edge and convenient online tool that comes with myriad time and effort saving features and is accessible to all stakeholders round-the-clock.

NEW DRAFT OF NATIONAL YOUTH POLICY

Why in news?

- The Government has reviewed the existing National Youth Policy, 2014 and prepared a new draft of National Youth Policy (NYP), which has been placed in public domain.

Key Highlights:

- The draft NYP envisages a ten-year vision for youth development that India seeks to achieve by 2030.
- It is aligned with Sustainable Development Goals (SDGs) and serves to 'unlock the potential of youth to advance India'.

Priority areas:

The NYP seeks to catalyze widespread action on youth development on five priority areas viz.

- education;
 - employment & entrepreneurship;
 - youth leadership & development;
 - health, fitness & sports; and
 - social justice.
- Each priority area is underpinned by the principle of social inclusion keeping in view of the marginalized sections.

Objectives envisaged in the draft National Youth Policy:

- The policy draws a detailed roadmap towards the vision outlined for the youth in the coming decade

and delineates the actions within each priority area.

- The policy envisions an education system in sync with National Education Policy, 2020 that imparts career opportunities and life skills to all young people.
- It ensures that the youth have access to sustainable livelihood opportunities that encourages them to stay within and revive the rural economy, generate employment via micro-region-specific strategies, foster entrepreneurship and social entrepreneurship, and support the informal and emerging gig economy.
- To develop India's youth, both men and women, as leaders of tomorrow, the policy prescribes strengthening the volunteering ecosystem, expanding opportunities for leadership development and mobilising technology to establish a vibrant youth enablement platform.
- Further efforts for the inclusion of marginalised and disadvantaged youths in volunteering and leadership opportunities are identified.
- The health and well-being of the youth, especially young women of reproductive age, will be ensured by strengthening preventative and palliative healthcare, especially for mental health, substance abuse disorders and sexual and reproductive health issues that are critical among this demographic.
- The policy purports a progressive and essential approach to mobilising technology and data to improve healthcare delivery and specific interventions to provide the marginalised youth with access to quality healthcare. The policy also proposes strengthening the overall fitness of youth by building a vibrant culture of sports and fitness.
- The policy outlines actions that will empower the youth and ensure their safety, strengthen the legal system for the quick delivery of justice and provide holistic support for the rehabilitation of juveniles. Special efforts are prescribed to ensure social justice for marginalised and vulnerable youths.
- The policy is a roadmap for the development of youth today to ensure a bright future for India tomorrow. This national-level framework will be adopted by states that will formulate their youth policies to serve the development needs of the region. The policy prescribes the necessary actions for various ministries in line with the respective thematic area.

What's next?

- The policy would be finalized after deliberations on received suggestions/comments and multi stake holders consultations.

GOVERNMENT AMENDED FLAG CODE OF INDIA

Why in news?

- Recently, the government has changed the country's flag code by allowing the tricolour to fly both day and night and be machine-made besides use of polyester.

- The move came as the government is going to launch 'HarGharTiranga'.

Key Highlights:

- The display, hoisting and use of the Indian national flag is governed by the Flag Code of India, 2002 and the Prevention of Insults to National Honour Act, 1971.

Paragraph 2.2 of Part-II of the Flag Code of India, 2002:

- The Flag Code of India, 2002 has been further amended through an order on 20, July 2022 and clause (xi) of paragraph 2.2 of Part-II of the Flag Code of India, 2002 shall now be read as under:- (xi) "where the Flag is displayed in open or displayed on the house of a member of public, it may be flown day and night".
- Earlier, the tricolour is allowed to be flown from sun rise to sun set, irrespective of weather conditions.

Paragraph 1.2 of Part-I of the Flag Code of India, 2002:

- Similarly, paragraph 1.2 of Part-I of the Flag Code of India, 2002 shall now be read as under: 1.2. "The National Flag shall be made of hand spun and hand woven or machine made, cotton/ polyester/ wool/ silk khadi bunting."
- Earlier machine made and polyester flags are not allowed to be used.

'Har Ghar Tiranga' campaign:

- The Azadi Ka Amrit Mahotsav is being celebrated to commemorate 75 years of a progressive independent India.
- The 'Har Ghar Tiranga' campaign has been launched to encourage the citizens to hoist the national flag in their homes from 13 to 15 August.

CONGRESS MPS SUSPENDED FROM LOK SABHA

Why in news?

- Recently, four Congress MPs were suspended from Lok Sabha for the rest of the session for displaying placards and disrupting proceedings.
- This after Speaker Om Birla issued a warning to Congress MPs Manickam Tagore, TN Prathapan, Jothimani and RamyaHaridas.
- Parliamentary Affairs Minister Pralhad Joshi later moved a resolution to suspend the four for the rest of the session.

How and why MPs are suspended?

- Members wilfully causing a ruckus or obstructing a business in the Houses of Parliament can be suspended.

Lok Sabha:

- In the Lok Sabha, the decision rests with the Speaker under Rule 375 of Rules of Procedure and Conduct of Business in Lok Sabha in case of a grave disorder arising in the House.
- Rule 374A states that in case a member comes into the well of the House or refuses to adhere to the rules and

wilfully obstructing its business by shouting slogans or otherwise, such a member will be named by the Speaker and "will stand automatically suspended from the service of the House for five consecutive sittings or the remainder of the Session, whichever is less".

Rajya Sabha:

- However, in the Rajya Sabha, the Chairman does not have the power to suspend a member.
- The Chairman may name a member 'name a member who disregards the authority of the Chair or abuses the rules of the Council by persistently and wilfully obstructing' the House.
- The Chairman of the Rajya Sabha is empowered under Rule Number 255 of its Rule Book to "direct any Member whose conduct is in his opinion grossly disorderly to withdraw immediately" from the House.
- "...Any Member so ordered to withdraw shall do so forthwith and shall absent himself during the remainder of the day's meeting."
- The Chairman may "name a Member who disregards the authority of the Chair or abuses the rules of the Council by persistently and wilfully obstructing" business.
- After this, the House may adopt a motion suspending the member from the House for not more than the remainder of the session, as per Deccan Chronicle.
- The House may withdraw the suspension through another motion. The rulebook empowers the Chairman to enforce his decisions.

Does an MP get paid while on suspension?

- Unfortunately, yes. Though the 'no work, no pay' policy has been under consideration for decades by successive governments at the Centre, it has not been introduced yet.
- Meanwhile, session after session of Parliament has seen disruptions from Opposition MPs.

Previous notable suspensions:

- The suspension of 12 MPs from Rajya Sabha for the entire Winter Session of Parliament in 2021 for their 'unruly' conduct in the previous August session remains the biggest such action in the history of the Upper House.
- The second-highest number occurred in the Upper House occurred in 2020, with eight MPs being suspended.
- On 15 March, 1989, when Rajiv Gandhi was Prime Minister, as many as 63 Members were suspended from the Lok Sabha for three days.
- In 2010, seven MPs were suspended from Rajya Sabha.
- Two repeat offenders stand out: Prominent leader and freedom fighter Raj Narayan who was suspended four times from Rajya Sabha while former deputy speaker Godey Murahari who was suspended twice from the Upper House.

LOK SABHA PASSES FAMILY COURTS' AMENDMENT BILL, 2022

Why in news?

- Recently, the Lok Sabha passed the Family Courts' Amendment Bill, 2022 by voice vote.
- It validates the existence of the three family courts in Himachal Pradesh and Two in Nagaland with retrospective effect.
- The bill also seeks validation of the decisions taken by the two states and the family courts.

Details:

- The family courts located at Shimla, Dharmashala, and Mandi in Himachal Pradesh will come into force, with a retrospective effect of February 15th 2019.
- The Family Courts located at Dimapur and Kohima in Nagaland will come into force with retrospect effect from November 12th 2008 on enactment of the Bill.
- The enactment was necessitated as it came to light in connection with a case that the central Government notifications were not existing with respect to these five family courts.

Family Courts Act 1984:

- The Family Courts Act 1984 was enacted for establishing family courts with a view to promote conciliation and secure speedy settlement of disputes relating to marriage and family affairs.
- The Act came into force on September 14, 1984 and as of April 2022, there were 715 family courts established and functioning in 26 states and union territories, including three such courts in Himachal Pradesh and Nagaland.
- Himachal Pradesh established three family courts at Shimla, Dharamshala and Mandi vide notification dated February 15, 2019, and the Government of Nagaland has established two Family Courts at Dimapur and Kohima vide notification dated September 12, 2008.
- The same are yet to be brought into force by the Central Government vide notification in the Official Gazette as prescribed under Section 1(3) of the Family Courts Act, 1984.

Amendment:

- The Amendment Act seeks to amend the Act of 1984 by inserting a proviso in Section 1(3) to provide for the establishment of Family Courts in Himachal Pradesh and Nagaland.
- It also seeks to insert a new section 3A to retrospectively validate all actions under the said Act taken by the two states and the Family Courts of those states prior to the commencement of the Family Courts (Amendment) Act, 2022.

Initiatives for Family Courts:

- Law and Justice Ministry requested the states to ensure at least a family court in each district. The

legal counseling will be made completely free of cost and efforts are on in this direction.

- Several initiatives have been taken to improve the judicial infrastructure in the country, all types of technological advances have been made using continuing the court trials during the Covid-19 pandemic.

COW URINE UNDER 'GODHANNYAYYOJANA'

Why in news?

- Recently, the Chhattisgarh government launched a unique scheme for institutionalized purchase of cattle urine at Rs 4 per litre.

Details:

- An extension of 'GodhanNyayYojana', Chief Minister launched the scheme under the auspicious 'Hareli' festival by selling 5 litres of cow urine, collected from his own 'gaushala' (in Durg district) to the Nidhi Self Help Group of Chandkhuri for Rs 20.

'Godhan Nyay Yojana':

- 'GodhanNyayYojana', which also entails procurement of cow dung, was rolled out two years ago with the aim of providing income to cattle-rearers, organic farmers and also strengthening the rural economy.

How cow urine will be used?

- The cow urine purchased under this scheme will be used to make pest control products and 'Jeevamrut' (liquid organic fertilizer).
- The move aims to minimize the use of expensive chemical pesticides and promote organic farming in the state by making organic pesticides available to farmers at nominal prices.
- In addition, it also aims to minimize the residue of chemical pesticides in food items, which destroys their nutritional value and cause harmful effects on human health.

Mukhyamantri Mahtari Nyay Rath Yatra:

- A new initiative by the State Women's Commission to create legal awareness among women, he also commenced the 'MukhyamantriMahtariNyayRathYatra' in the state.
- This Rath (chariot) will travel in all the districts, creating awareness about the legal provisions of women and their constitutional rights, through the medium of short films, messages, and brochures.
- Each MahatariNyayRath will have two advocates present, who will listen to the grievances of women and provide them with information and advice. Women will also be able to submit their applications for resolution of their grievances to the Women's Commission, through NyayRath.

Significance:

- It is important for every woman, educated or uneducated, housewives or working, to be aware of the functions of the Women's Commission, be

informed about the relevant laws and rules, and to be educated about their legal rights.

About Hareli Festival:

- Hareli festival is considered to be the first festival of Chhattisgarh, which is celebrated every year on Hareli Amavasya in the month of Sawan.
- This festival has a special significance for the farmers of Chhattisgarh. After the sowing of paddy, all agricultural and iron tools are worshiped by the farmers on the day of Hareli.
- On the day of Hareli, men make a Gedi (made of bamboo) and climb on it.

'ONE DISTRICT, ONE DESTINATION' (ODOD) SCHEME

Why in news?

- In an attempt to achieve the dual objective of boosting eco-tourism and increasing employment opportunities, the Uttar Pradesh government has identified 56 eco-tourism sites in 56 districts under the 'One District, One Destination' (ODOD) scheme.

Concept:

- The concept is about identifying one destination in every district that could be branded as an eco-tourism spot to attract nature enthusiasts.
- The Department of Forest is identifying potential areas in every district of the state which will be developed under the ODOD scheme, so that these sites can be integrated with tourism.

Eco-tourism spots:

- UP has several eco-tourism spots, but the most prominent are the tiger reserves, wildlife sanctuaries and wetlands.
- The Katarni Ghat Wildlife Sanctuary, located in the Upper Gangetic plain falling in Bahraich boasts of having tigers and a mosaic of sal and teak woods.
- The Hastinapur Wildlife Sanctuary is notable for being the natural habitat of the 'barasingha' (swamp deer).
- Similarly, the Majhuli Sagar of Siddharthnagar, Badela Tal (lake) of Azamgarh and the Ghoomar Tal of Jaunpur will get special recognition as eco-tourism destinations soon. Besides, many such areas endowed with serene natural beauty will be seen on the map of eco-tourism.
- The 56 destinations include - Dudhwa National Park in Lakhimpur Kheri, Chandra Prabha Wildlife Sanctuary in Chandauli and Katarni Ghat Wildlife Sanctuary in Bahraich.

Significance:

- Similar places will be selected and developed under ODOD. Basic facilities like rest rooms, roads, electricity, water, toilets, rest rooms as well as security arrangements will be made at the selected sites. An Eco-tourism Board is also being formed for this.

- There is immense potential for eco-tourism in UP. The location of each district is suitable for specific natural, environmental or wildlife tourism. If these places are interconnected, then it can attract tourists for picnics, or one-day-tours.

INTERNATIONAL RELATION

RUSSIA WITHDRAWS FROM SNAKE ISLAND

Why in news?

- Recently, Russian forces abandoned the strategic Black Sea outpost of Snake Island.
- Russian forces have withdrawn from Snake Island in the Black Sea in a move Ukraine hailed as a victory and Russia said it Moscow was not seeking to hinder the United Nations' efforts to organise a corridor for the export of Ukrainian food products

What it translates?

- The most significant aspect is that this could open the door to Ukrainian grain exports from Odesa, which is critical for Ukraine's economy and for the global food supply.
- Lifting the Ukraine ports blockade has been a primary goal of the West.
- But several military experts said that driving the Russians from Snake Island would not by itself be enough to unblock the ports. Russia could still intercept cargo ships at sea.

Strategic importance:

- Snake or Serpent Island, called Zmiinyi in Ukrainian, is a rocky outcrop that extends less than 700 metres from end to end, and is often described as being "X-shaped".
- It is located 35 km from the coast, to the east of the mouth of the Danube and roughly southwest of Odessa.
- It sits near the Danube Delta and close to the sea border with Romania, a NATO member.
- It has strategic value for the control of the northwestern Black Sea, its coastal cities, and shipping routes that form part of the world's grain supply chain.
- Russia's withdrawal from the island may ease its blockade on Ukrainian exports that feed some of the world's poorest countries.

Achilles and the Trojan War

- Stories about the island stretch back millennia to the ancient Greeks' mythological Trojan war.
- Snake Island has a long association with Achilles, the great warrior in Greek myth considered invincible but for one vulnerable spot on his heel.

Dispute with Romania:

- The International Court of Justice drew a new maritime border between Romania and Ukraine in 2009 to settle a dispute focused around Snake Island

- over parts of the Black Sea believed to hold significant oil and gas reserves.
- At the time, Ukraine said Snake Island was inhabited and economically active, home to around 100 people including military personnel, lighthouse keepers, scientists and their families.

ALGERIA CELEBRATES 60 YEARS OF INDEPENDENCE

Why in news?

- Algeria celebrates 60 years of its independence from France with a large military parade, but the tension between the two countries remains due to colonial era brutality.
- The gruelling eight-year war that brought freedom to the country was put to an end with the signing of the Evian Accords in March 1962.

New logo:

- Authorities in Algiers closed a 16-kilometre (10 mile) stretch of a major artery so that the army could conduct final preparations for its parade, the first one in 33 years.
- The government commissioned a logo consisting of a circle with 60 stars, including icons and tools, to commemorate "a glorious history and a new ear."

Background:

- Algeria ultimately gained independence from colonial control on July 5, days after 99.72 per cent of its population supported it in a referendum.
- However, the 132-year occupation still has its impact on Algeria's ties with France.
- Thousands of people died during the battle for independence, but 60 years later, despite numerous overturns made by French President Emmanuel Macron, France ruled out any kind of atonement for the colonial era.

LT. GEN. SUBRAMANIAN APPOINTED AS FORCE COMMANDER OF UN MISSION IN SOUTH SUDAN

Why in news?

- Recently, Lieutenant General Mohan Subramanian of the Indian Army has been appointed by UN Secretary-General as his new Force Commander of the United Nations Mission in South Sudan (UNMISS).
- He succeeded Lt. Gen. Shailesh Tinaikar, also from the Indian Army.

India's role in UN peacekeeping:

- India is among the largest contributors of uniformed personnel to UN peacekeeping.
- The UN mission in South Sudan, a country born in July 2011, has 17,982 personnel deployed with it as of November 2021.
- India is the second-highest military troop-contributing country to UNMISS with 2,385 Indian

- peacekeepers serving with the mission, second only to Rwanda.
- In addition, India currently contributes 30 police personnel to UNMISS.

INDIA PROJECTED TO SURPASS CHINA AS WORLD'S MOST POPULOUS COUNTRY DURING 2023: UN REPORT

Why in news?

- Recently, the United Nations Department of Economic and Social Affairs, Population Division released World Population Prospects 2022.

Global population:

- The global population is projected to reach eight billion on November 15, 2022.
- The global population is growing at its slowest rate since 1950, having fallen under 1% in 2020.
- The latest projections by the United Nations suggest that the world's population could grow to around 8.5 billion in 2030 and 9.7 billion in 2050.
- It is projected to reach a peak of around 10.4 billion people during the 2080s and to remain at that level until 2100.

Projections about India:

- According to the report, India's population stands at 1.412 billion in 2022, compared to China's 1.426 billion.
- India, which will surpass China as the world's most populous nation by 2023, is projected to have a population of 1.668 billion in 2050, way ahead of China's 1.317 billion people by the middle of the century.

Most populated regions:

- The world's two most populous regions in 2022 were Eastern and South-Eastern Asia, with 2.3 billion people, representing 29% of the global population, and Central and Southern Asia, with 2.1 billion, representing 26% of the total world population.
- China and India accounted for the largest populations in these regions, with more than 1.4 billion each in 2022.
- More than half of the projected increase in global population up to 2050 will be concentrated in just eight countries of the Democratic Republic of the Congo, Egypt, Ethiopia, India, Nigeria, Pakistan, the Philippines and Tanzania.

Outflow of migrants:

- It is estimated that ten countries experienced a net outflow of more than 1 million migrants between 2010 and 2021.
- In many of these countries, these outflows were due to temporary labour movements, such as for Pakistan (net outflow of -16.5 million during 2010-2021), India (-3.5 million), Bangladesh (-2.9 million), Nepal (-1.6 million) and Sri Lanka (-1 million).

- In other countries, including the Syrian Arab Republic (-4.6 million), Venezuela (Bolivarian Republic of) (-4.8 million), and Myanmar (-1 million), insecurity and conflicts have driven the net outflow of migrants over the decade.

Life expectancy at birth:

- Global life expectancy at birth reached 72.8 years in 2019, an improvement of almost 9 years since 1990. Further reductions in mortality are projected to result in an average global longevity of around 77.2 years in 2050.
- Yet in 2021, life expectancy for the least developed countries lagged seven years behind the global average.

NATO AFTER UKRAINE INVASION

Why in news?

- Recently, the Leaders of the North Atlantic Treaty Organization (NATO), met in Madrid, Spain, even as Russia's war in Ukraine is still on, with knock-on effects across the world in terms of supply chain disruptions, commodity price surges and broader inflationary pressures mounting fast.
- More than four months into the invasion of Ukrainian territory, which Russian President Vladimir Putin has called a "special military operation," at least two nations in the region, Sweden and Finland, are seeking rapid integration into NATO.

How strong was NATO before the war?

- NATO appeared to be weakened during the administration of former U.S. President Donald Trump, who frequently threatened to exclude from the U.S.'s protective umbrella any member states that did not pay enough for that privilege.
- A further blow came when U.S. President Joe Biden pulled his country's troops out of Afghanistan, a NATO military mission, more or less unilaterally.
- Meanwhile, Russia had steadily been confronting NATO publicly, since the late 2000s, railing against NATO expansion, and since its annexation of Crimea in 2014, threatening further territorial expansion into Ukrainian territory.

What are the recent developments that have strengthened NATO?

- Firstly, NATO allies other than the U.S. remained firmly committed to financing the organisation's military needs. Their combined defence investments have jumped by \$130 billion from 2014-19, in part driven by Russia's annexation of Crimea.
- Now, given the prolonged conflict in Ukraine, NATO has announced that it will increase its forces at "high readiness" from 40,000 to over 3,00,000 troops by mid-2023.

Joining of Finland & Sweden:

- Second, after decades of maintaining a position of neutrality, Finland and Sweden are set to join NATO

possibly within a year, in a large part driven by the strategic insecurity they face as neighbours of Russia, and the precedent that it has set with his invasion of and alleged human rights violations and war crimes in Ukraine.

- While most NATO members are keen for Finland and Sweden to join the organisation, Turkey was the final holdout citing concerns over the two countries allegedly providing safe haven to a group that Istanbul considers a terrorist organisation.
- Nevertheless, after joint security negotiations in recent days, Turkey has also lent its support to Finland and Sweden joining NATO.
- The main point of such an expansion would be to tap into the military support that the two countries would provide to the alliance, the fact that Finland has a 1,340 km border with Russia and that both countries will, as required by NATO, spend 2% of their GDP on defence.

What happens next?

- While NATO appears fortified and ready to face the strategic gauntlet thrown down by Russia, there is a real risk that the people of its member-nations are getting increasingly frustrated.
- There's unending economic pain and the leaders have pledged to meet the burgeoning demand for weapons and other military support required by Ukraine to hold on to its territories in the east.
-

INDIA BECOMES 68TH COUNTRY TO JOIN INTERPOL'S CHILD SEXUAL ABUSE DATABASE

Why in news?

- Recently, India joined the Interpol's International Child Sexual Exploitation (ICSE) database.
- It will allow India to draw links between victims, abusers and crime scene using audio-visual data.

What is ICSE database?

- An intelligence and investigative tool, the database allows specialized investigators to share information on cases of child sexual abuse.
- Through the image and video comparison software, the investigators can nail down the criminals by identifying victims and places of crime.
- Detectives in all 68 countries can exchange information and notes with their colleagues across the world.
- By analysing the digital, visual and audio content of photographs and videos, victim identification experts can retrieve clues, identify any overlap in cases and combine their efforts to locate victims of child sexual abuse.

CBI:

- The CBI, which is India's nodal agency for Interpol matters, joined the database.

Sexual exploitation of Children:

- In India, National Crime Records Bureau's(NCRB) data stated that Uttar Pradesh topped the list of sexual offences against children.
- UP had reported 6,898 Protection of Children from Sexual Offences Act(POSCO) cases, followed by Maharashtra with around 5,687 cases, Madhya Pradesh with 5,648, Tamil Nadu with 3,090 and West Bengal with 2,657 cases.

IRAN WILL BECOME FULL-FLEDGED MEMBER OF SCO IN 2022

Why in news?

- Iran will be admitted to the Shanghai Cooperation Organisation (SCO) in 2022, with a memorandum on the country's obligations to be signed at a summit in Samarkand in September.
- In 2022, within Uzbekistan's chairmanship, Iran will be admitted to the SCO as an observer state.

Shanghai Cooperation Organisation (SCO):

- The SCO was founded in Shanghai in 2001 by the leaders of Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, Russia and China.
- It evolved from an earlier regional security grouping formed in 1996 after the collapse of the Soviet Union when the Central Asian states gained independence from Moscow.
- The historical meeting of the Heads of State Council of the Shanghai Cooperation Organisation was held on June 8-9, 2017 in Astana. At the meeting, the status of a full member of the Organization was granted to India and Pakistan.

Focus:

- Initially focused on regional security, including border conflicts, terrorism and militant Islam, its activities have expanded to cover economics and trade, transport and law enforcement.
- Security and economic cooperation remain priorities.
- China and Russia are the dominant members. Russia regards Central Asia as its sphere of influence but Chinese economic sway is growing.
- At an informal level, the SCO is a diplomatic platform that helps address and contain potential friction.

CROATIA JOINED EUROZONE

Why in news?

- Croatia formally became the 20th member of the euro common currency as European Union finance ministers approved the country's request.
- The approval will come into being at the start of 2023.

Background:

- The European Council, the grouping of 27 EU governments, adopted three legal acts required to allow Croatia - an EU member since 2013 - to introduce the euro on January 1.

- One of those acts set the conversion rate for entry at one euro to 7.53450 Croatian kuna, with Croatia now having a few months to prepare the practicalities for the currency switch.

Key Highlights:

- Croatia is the first country to join the euro since Lithuania in 2015.
- It will help stabilize interest rates, making it easier and cheaper for people and companies to borrow and it brings a positive impact on growth thanks to the full integration into EU single market.
- To adopt the euro, Croatia had to fulfil criteria of price and exchange rate stability, sound public finances and moderate long-term interest rates, all measured against EU benchmarks.

Seven previous enlargements:

- Created in 1999 among 11 countries, including Germany and France, the euro has gone through seven previous enlargements starting with Greece in 2001.
- The appeal of euro membership is reflected by the last three expansions, which brought in Baltic states between 2011 and 2015.

Croatia:

- Croatia, in southeastern Europe, has been an independent country since 1991 when it left then-federal Yugoslavia.
- The country applied for EU membership in 2003 and joined the bloc in 2013. That was the last time the EU expanded.
- Neighbouring Slovenia, also an ex-Yugoslav republic and now EU member, adopted the euro in 2007.

I2U2 SUMMIT

Why in news?

- Indian Prime Minister is set to participate in the first I2U2 Leaders' Summit on 14 July.
- The summit is set to be held virtually.

What does I2U2 stand for?

- The new grouping will be called "I2U2" – "I" for India and Israel and "U" for the US and UAE.

What is its origin?

- The I2U2 Grouping was conceptualised during the meeting of the foreign ministers of the four countries held on 18 October.
- Each country also has Sherpa-level interactions regularly to discuss the possible areas of cooperation.

What is it aimed at?

- I2U2 is aimed to encourage joint investments in six mutually identified areas such as water, energy, transportation, space, health, and food security.
- It intends to mobilise private sector capital and expertise to help modernise infrastructure, low carbon development pathways for our industries,

improve public health, and promote the development of critical emerging and green technologies.

- The leaders will discuss the possible joint projects within the framework of I2U2 as well as the other common areas of mutual interest to strengthen the economic partnership in trade and investment in our respective regions and beyond.

What's the agenda?

- The I2U2 summit is expected to give greater shape to the grouping's agenda that is focused on economic cooperation and infrastructure projects.
- The countries have said there is no military angle to this grouping and that the focus is a constructive agenda regarding the economy and infrastructure, some experts have dubbed I2U2 the 'West Asian Quad'.

What it holds for India?

- India is a massive consumer market. It is a massive producer of high-tech and highly sought-after goods as well.
- So, there are a number of areas where these countries can work together, whether its technology, trade, climate, COVID-19, and potentially even security as well.

NEPAL PARLIAMENT PASSES FIRST CITIZENSHIP AMENDMENT BILL

Why in news?

- Recently, Nepal's Parliament passed the country's first Citizenship Amendment Bill, which was under discussion for more than two years as political parties failed to forge a consensus on it.

Key Highlights:

- The bill has been under discussion in the House of Representatives since 2020, but it failed to be endorsed due to differences among the political parties over certain provisions, namely the seven-year waiting period for obtaining naturalised citizenship for foreign women married to Nepali men.
- The bill has been tabled in Parliament to amend the Nepal Citizenship Act 2006 and make provisions for providing citizenship as directed by the Constitution.

Background:

- Earlier, the Nepal government had withdrawn the Citizenship Bill from the House of Representatives after the main opposition CPN-UML lawmakers protested against its proposals.
- In 2018, the then KP Sharma Oli government had registered the bill at the Parliament Secretariat.

INTERNATIONAL NORTH-SOUTH TRANSPORT CORRIDOR (INSTC)

Why in news?

- An India-bound cargo sent from Russia using the International North-South Transport Corridor (INSTC) reached the Sarkhas railway station in Iran recently.
- From the railway station, the cargo will go to Bandar Abbas port in southern India and then come to India via the Arabian Sea.

What is INSTC?

- INSTC is a 7,200 km-long transportation network offering the shortest connectivity route to its member states.
- It was established on September 12, 2000, by Iran, Russia and India. The corridor encompasses sea, road and rail routes.
- The main purpose of the corridor was to reduce carriage costs and transit time between India and Russia. The transit time is expected to reduce to almost half, once the corridor becomes fully functional.
- The agreement has been ratified by 13 countries namely, Azerbaijan, Belarus, Bulgaria, Armenia, India, Iran, Kazakhstan, Kyrgyzstan, Oman, Russia, Tajikistan, Turkey, and Ukraine.
- INSTC links the Indian Ocean to the Caspian Sea via the Persian Gulf.

Why India supports INSTC?

- India supports the corridor to reduce transit cost and time. Europe-bound shipments that take 45-60 days to reach Europe, via Suez Canal, can be delivered in 23 days using INSTC.
- The corridor will improve India's economic engagement with gulf countries like Iran and Iraq. India has also been pushing for boosting regional connectivity. It is already working with Iran to develop the Chabahar port.
- India has proposed to include the port in the framework of the INSTC. At a connectivity conference in Tashkent in 2021, External Affairs Minister S Jaishankar projected the Chabahar Port as a key regional transit hub including Afghanistan.

Energy:

- Also, the route may help India is fulfilling its energy needs. The improved connectivity along with RBI's latest rupee settlement announcement may help the country import oil from Iran.
- Once a leading importer of Iranian oil, India stopped buying the commodity after the USA imposed sanctions on Iran in 2018.
- India may also provide humanitarian aid to crisis-stricken Afghanistan through INSTC.

INSTC's challenges

- Central Asia has a major security threat in the form of the Islamic State (IS), a terrorist organisation.
- The issue of differential tariffs and customs in the region is a major challenge that India needs to overcome.

CAATSA WAIVER FOR INDIA TO PURCHASE S-400 MISSILE SYSTEM FROM RUSSIA

Why in news?

- The US House of Representatives passed a legislative amendment that approves an India-specific waiver for punitive CAATSA sanctions for its purchase of the S-400 missile defence system from Russia.
- The legislative amendment was passed by voice vote as part of an en bloc (all together as a single unit) amendment during floor consideration of the National Defence Authorisation Act (NDAA).

Details:

- Authored and introduced by Indian-American Congressman Ro Khanna, the amendment urges the Biden administration to use their authority to provide India with a Countering America's Adversaries Through Sanctions Act (CAASTA) waiver to help deter aggressors like China.

ICET:

- The legislation says that the United States-India Initiative on Critical and Emerging Technologies (ICET) is an essential step to developing closer partnerships between governments, academia, and industry in the two countries to address the latest advances in artificial intelligence, quantum computing, biotechnology, aerospace, and semiconductor manufacturing.
- Such collaborations between engineers and computer scientists are vital to help ensure that the United States and India, as well as other democracies around the world, foster innovation and facilitate technological advances which continue to far outpace Russian and Chinese technology.

About CAATSA:

- CAATSA is a tough US law that authorises the US administration to impose sanctions on countries that purchase major defence hardware from Russia in response to Russia's annexation of Crimea in 2014 and its alleged meddling in the 2016 US presidential elections.
- The law was brought in 2017 and provides for punitive actions by the US government against any country engaged in transactions with the Russian defence and intelligence sectors.

Background:

- In October 2018, India signed a USD 5 billion deal with Russia to buy five units of the S-400 air defence missile systems, despite a warning from the then-Trump administration that going ahead with the contract may invite US sanctions.
- The S-400 is known as Russia's most advanced long-range surface-to-air missile defence system.
- The US has already imposed sanctions on Turkey under the CAATSA for the purchase of a batch of

S-400 missile defence systems from Russia.

- Following the US sanctions on Turkey over the procurement of S-400 missile systems, there were apprehensions that it may impose similar punitive measures on India.

Way Forward:

- The US waiver to India under CATSAA law shows that there is no relationship of greater significance to US strategic interests than the US-India partnership.

16TH ROUND OF MILITARY TALKS BETWEEN INDIA AND CHINA

Why in news?

- The 16th round of military talks between India and China held recently, to discuss disengagement at the remaining friction points along the Line of Actual Control (LAC) in eastern Ladakh particularly Patrolling Point 15 (PP15), the Hot Springs area, hit a stalemate once again.
- India and China agreed to maintain dialogue to arrive at a mutually acceptable resolution at the earliest.

Key Highlights:

- Both sides, reaffirmed that the resolution of the pending issues would help in the restoration of peace and tranquility along the Line of Actual Control (LAC) in the region and enable progress in bilateral relations.
- At the talks, India strongly pressed for early disengagement of troops from all the remaining friction points in the region and demanded the restoration of the status quo ante as of April 2020, before the start of the military standoff.
- The joint statement said the two sides agreed to maintain security and stability on the ground in eastern Ladakh and agreed to stay in "close contact" and maintain dialogue through military and diplomatic channels to work out a mutually acceptable resolution to the remaining issues 'at the earliest'.

15th & 16th 15th round of military dialogue:

- The 15th round of military dialogue took place on March 11 and it too failed to yield any significant outcome.
- Indian delegation also sought resolution of pending issues in Depsang Bulge and Demchok. India has been consistently maintaining that peace and tranquillity along the LAC were key for the overall development of the bilateral ties.
- The 16th round of military talks was held 10 days after External Affairs Minister S Jaishankar met his Chinese counterpart Wang Yi in Bali.
- At the one-hour meeting on the sidelines of a conclave of foreign ministers of the G20 nations, he Jaishankar conveyed to Wang the need for early resolution of all the outstanding issues in Eastern Ladakh.

Background:

- The eastern Ladakh border standoff erupted on May 5, 2020, following a violent clash in the Pangong lake areas.
- Both sides gradually enhanced their deployment by rushing in tens of thousands of soldiers as well as heavy weaponry.
- As a result of a series of military and diplomatic talks, the two sides completed the disengagement process in 2021 on the north and south banks of the Pangong Lake and in the Gogra area.
- Each side currently has around 50,000 to 60,000 troops along the Line of Actual Control (LAC) in the sensitive sector.

CHINA PLANS TO BUILD NEW HIGHWAY ALONG LINE OF ACTUAL CONTROL: REPORT

Why in news?

- China plans to build a new highway along the Line of Actual Control (LAC) with India as part of its efforts to strengthen its strategic position and project its power.

New Highway:

- The highway, spanning from Lhunzecounty in Tibet to Mazha in Kashgar, Xinjiang region, is among 345 construction plans proposed in the new national programme, which aims to build a total of 461,000 kms of highway and motorway by 2035, as China seeks to revive its faltering economy with infrastructure investment.
- Lhunzecounty formed part of Arunachal Pradesh, which China claims as part of South Tibet.
- The highway known as G695 is expected to run through Cona county which lies immediately north of the LAC, Kamba county bordering Sikkim and Gyirongcounty near the border with Nepal.
- The planned road would also go through Burangcounty between Tibet, Nepal and India as well as Zanda county in Ngari prefecture, parts of which are held by India.
- The details of the new construction remain unclear, but the highway, when completed, may also go near the hotly contested areas such as the Depsang Plains, Galwan Valley and Hot Springs on the LAC.

Development in Bhutan:

- Recently, new satellite images emerged indicating the construction of a Chinese village East of the Doklam plateau on the Bhutanese side, a region that is considered important for India's strategic interest.

Development in Tibet:

- Chinese President Xi Jinping travelled by bullet train during his rare visit to border areas in Tibet.
- The massive development of rail, road and airport development vastly improved the Chinese military's ability to move men, materials and weapons to the border areas at a faster pace.

- Tibet has five airports including at Nyingchi, Shigatse and Ngari located close to the Indian and Nepal borders.
- Authorities in Tibet accelerated 15 key construction projects in 2021, including the middle section of the highway from the regional capital Lhasa to Xigaze.
- Tibet completed an investment worth 20.1 billion yuan (about USD 3.2 billion) in fixed assets for road transport in 2021.

Background:

- The report of the new highway plan along the LAC comes at a time when India and China made efforts to resolve the over two-year eastern Ladakh standoff.
- The two countries have so far held 16 rounds of talks to disengage troops at different points.
- At 16th round of talks between the top military commanders of the two countries, it was learnt that the Indian delegation sought resolution of pending issues in Depsang Bulge and Demchok.
- India has been consistently maintaining that peace and tranquillity along the LAC were key for the overall development of the bilateral ties.

UKRAINE, RUSSIA SIGN DEAL TO ALLOW GRAIN EXPORTS ACROSS BLACK SEA

Why in news?

- Russia and Ukraine signed separate agreements with Turkey and the United Nations clearing the way for the export of Ukrainian grain as well as some Russian grain and fertilizer across the Black Sea.
- The long-sought deal ends a wartime standoff that has threatened food security around the globe.

Black Sea Initiative:

- The plan, known as the Black Sea Initiative, opens a path for significant commercial food exports from three key Ukrainian ports: Odesa, Chernomorsk and Yuzhny.
- The agreement says an UN-led joint coordination center will be set up in Istanbul staffed by officials from Ukraine, Russia, Turkey to run the plan, including scheduling cargo ships' arrivals and departures.
- Inspectors representing all parties at the Bosphorus in Turkey will search vessels entering and leaving Ukrainian ports to ensure no weapons or soldiers are on board.
- Under the deal, 'all activities in Ukrainian territorial waters will be under authority and responsibility of Ukraine,' and the parties agree not to attack vessels and port facilities involved in the initiative. If demining is required to make the shipping lanes safe, a minesweeper from another country could clear the approaches to Ukrainian ports.
- The sides will monitor the movement of ships remotely and no military ships, aircraft or drones will be allowed to approach "the maritime humanitarian corridor" closer than a distance the center sets.

➤ The agreement will remain in effect for 120 days and can be extended automatically.

Exports of Ukraine:

- Ukraine is one of the world's largest exporters of wheat, corn and sunflower oil, but Russia's invasion of the country and naval blockade of its ports have halted shipments.
- Some Ukrainian grain is transported through Europe by rail, road and river, but the prices of vital commodities such as wheat and barley have soared during the war.
- Although international sanctions against Russia did not target food exports, the war has disrupted shipments of Russian products because shipping and insurance companies did not want to deal with Russia.

Way Forward:

- The UN plan will enable Ukraine to export 22 million tons of grain and other agricultural goods that have been stuck in Black Sea ports due to Russia's invasion.
- Over the past six months, prices for food have risen 187 per cent in Sudan, 86 per cent in Syria and 60 per cent in Yemen, just to name a few countries.

RUSSIA TO QUIT INTERNATIONAL SPACE STATION PARTNERSHIP WITH US AFTER 2024

Why in news?

- Recently, Russia has decided to quit the International Space Station (ISS) after 2024 and focus on creating its own orbital outpost.
- The development had been on the cards ever since Russia announced the invasion of Ukraine and Russian forces marched towards Kyiv nearly four months ago.

Background:

- The decision comes weeks after the US criticised Russian astronauts for using the Space Station to push political narratives after cosmonauts displayed flags of Ukrainian areas controlled by Russian forces.
- The development also happened just days after a Russian and a European astronaut conducted a joint spacewalk to fit a robotic arm on the Russian module Nauka that recently arrived at the flying laboratory.

What it translates?

- The announcement paves the way for Russia's long-term plan of launching its own station in orbit, boosting its domestic research in the sector.
- Russia had been the leader in space exploration up until NASA landed the first human on the Moon in what was one of the biggest developments to have come out of the cold war.

Advantage China:

- The news will be well received in China, which is building its own space station, Tiangong, and nearing its completion by the end of 2022.

➤ The latest development is set to boost chances for the Chinese National Space Administration to attract not just scientific research proposals but also investments.

- China is on a roll given that there are already plans in place to de-orbit the ISS by the end of this decade.
- The Space Station, which had been over three decades in the making had been a hub of deep space exploration and a symbol of cooperation between the West and Russia after the cold war ended.

China & Russia:

- Russia and China have already been vibing when it comes to space exploration and the two have plans to jointly develop a research base on the Moon.
- The two had in June 2021 unveiled plans Joint International Lunar Research Station (ILRS), which includes building facilities both on the surface and in the lunar orbit. While engineers are undecided on the final location of the lunar base, initial studies put the Amundsen crater on the South Pole as a potential site.

Boost for Private Companies:

- Russia's withdrawal from the Space Station will open a new door for private companies to enter the Space Station as the laboratory requires a permanent presence and funding to sustain itself. The private sector will not only bring new research but also major dollars for NASA to keep pushing it till 2030.
- Several private companies like Blue Origin are already working on building a commercial space station, Orbital Reef, in Low Earth Orbit, and the development could mean they are up for capturing a big chunk of that market.
- SpaceX will also be looking to score a big chunk of this pie as it works to push to Moon and Mars in the future.

End of an era:

- The announcement marks the beginning of the end of the Space Station that has been the center of scientific research outside the planet for over two decades.
- Nearly 110 countries have so far been part of research and experimentation done in zero-gravity on the station that flies at 27,576 kmph about 400 kilometers above the planet.
- Pegged at nearly \$100 billion, the Space Station is about as long as a football field and consists of two main sections, one run by Russia, and the other by the US. At the moment, the flying laboratory is home to seven humans including three Russian cosmonauts and four astronauts of American and European descent.
- NASA has announced plans to deorbit the Space Station in 2031 after it completes its extended mission timeline in 2030.
- It is worth mentioning that the Russian segment will be crucial to deorbit the Space Station and the two

countries will surely work out a way to ensure that even if Russia walks out after 2024.

Way Forward:

- Whatever way this goes, the Space Station will remain the epitome of engineering, physics, and diplomatic excellence that ensured a continuous collaboration in the heavens while the world churned around.

INDIA BACKS UN RESOLUTION TO RECOGNISE HUMAN RIGHT TO HEALTHY ENVIRONMENT

Why in news?

- Recently, India has voted in favour of a UN General Assembly resolution that recognises the right to a clean, healthy and sustainable environment as a human right.
- But India dissociated itself from an operative paragraph of the text and voiced its concerns over the procedure and substance of the resolution.

Details:

- The 193-member General Assembly adopted the resolution with 161 votes in favour and abstentions by Belarus, Cambodia, China, Ethiopia, Iran, Kyrgyzstan, Russia and Syria.
- While India voted in favour of the resolution, it voiced its concerns over the procedure and substance of the resolution.
- The resolution recognises the right to a clean, healthy and sustainable environment as a human right and affirms that the promotion of the human right to a clean, healthy and sustainable environment requires the full implementation of the multilateral environmental agreements under the principles of international environmental law.

India's stand:

- India stands ready to support any effort for a better environment and to further international cooperation for environmental protection. However, it constrained to dissociate ourselves with the operative paragraph 1 of the resolution.

Operative paragraph 1:

- The operative paragraph 1 of the resolution reads that the UNGA Recognises the right to a clean, healthy and sustainable environment as a human right.
- He requested that this statement be included in the official records in the meeting.
- He asserted that the UNGA resolutions do not in themselves create binding obligations, and it is only through conventions and treaties that State parties commit to a new human right and undertake appropriate obligations for the realisation of such a right.
- Further, there is no clear understanding and agreed definition of terms 'clean', 'healthy' and 'sustainable'. Currently, these terms remain open to subjective interpretations and thereby dilutes the very objective

of the recognition proclaimed in the present resolution.

Preambular paragraph 8 of the Human Rights Council:

- India also remains concerned that even after strong support by many member states for the inclusion of preambular paragraph 8 of the Human Rights Council resolution 48/13, which forms the basis of the current resolution, the decision of the core group was otherwise.
- It is an important paragraph that reaffirms the importance of international cooperation, on the basis of mutual respect, in full compliance with the principles and purposes of the Charter, with full respect for the sovereignty of States while taking into account national priorities.

Way Forward:

- UN Secretary-General welcomed the adoption of the historic resolution, saying it demonstrates that the member states can come together in our collective fight against the triple planetary crises of climate change, biodiversity loss, and pollution.
- He however noted that adoption of the resolution is only the beginning and urged states to make the right to a clean, healthy and sustainable environment a reality for everyone, everywhere.

ECONOMY

SEVEN STATES AMONG TOP ACHIEVERS IN 'EASE OF DOING BUSINESS' RANKING

Why in news?

- Recently, Finance Minister released the assessment report of the States and Union Territories under 'Business Reforms Action Plan (BRAP), 2020'.

Aim:

- The broader aim of the exercise is to boost investor confidence, foster a business-friendly climate and augment the ease of doing business across the country by introducing an element of healthy competition through a system of assessing states based on their performance in the implementation of Business Reforms Action Plan (BRAP).

Top achievers:

- Andhra Pradesh, Gujarat and Telangana are among the seven states categorised as top achievers in the ranking of states and Union Territories based on the implementation of the business reform action plan 2020.
- Haryana, Karnataka, Punjab and Tamil Nadu are the other states on the list of top achievers.

Achievers:

- Himachal Pradesh, Madhya Pradesh, Maharashtra, Odisha, Uttarakhand and Uttar Pradesh have been categorised as Achievers in the ranking.

Aspires:

- The Aspires category too includes seven states, including Assam, Kerala and Goa.
- Other states in this section are Chhattisgarh, Jharkhand, Kerala, Rajasthan and West Bengal.

Emerging business ecosystems:

- In the category of emerging business ecosystems, there are 11 states and UTs, including Delhi, Puducherry and Tripura.
- Andaman and Nicobar, Bihar, Chandigarh, Daman and Diu, Dadra and Nagar Haveli, Jammu and Kashmir, Manipur, Meghalaya, Nagaland, and Tripura are the other states and UTs in this section.

New system of ranking:

- The Commerce and Industry Ministry has this time changed the system of ranking by making it category-based - top achievers, achievers, aspires, and emerging business ecosystems - against the earlier practice of announcing ranks.

Reform points:

- The BRAP 2020 includes 301 reform points covering 15 business regulatory areas, such as access to information, single window system, labour and land administration.
- 118 new reforms were included to further augment the reform process. Sectoral reforms with 72 action points spread across nine sectors like trade license, healthcare, legal metrology, and cinema halls were introduced for the first time to expand the scope of the reform agenda.

Way Forward:

- The purpose of this BRAP exercise is to infuse a culture of learning from each other's best practices and improve upon the business climate in each State/ UT with a unified objective for India to emerge as the most favoured investment destination across the globe.

'UDYAMI BHARAT' PROGRAMME

Why in news?

- Recently, the Prime Minister participated in the 'Udyami Bharat' programme at VigyanBhawan in New Delhi.
- He also launched the 'Raising and Accelerating MSME Performance' (RAMP) scheme, 'Capacity Building of First-Time MSME Exporters' (CBFTE) scheme and new features of the 'Prime Minister's Employment Generation Programme' (PMEGP).
- He also digitally transferred assistance to beneficiaries of PMEGP for 2022-23; announce results of MSME Idea Hackathon, 2022; distribute National MSME Awards, 2022; and issue Digital Equity Certificates to 75 MSMEs in Self Reliant India (SRI) Fund.

Udyami Bharat:

- 'Udyami Bharat' is reflective of the continuous commitment of the government, right from day one, to work towards the empowerment of MSMEs.
- The government has launched several initiatives from time to time like MUDRA Yojana, Emergency Credit Line Guarantee Scheme, and Scheme of Fund for Regeneration of Traditional Industries (SFURTI) to provide necessary and timely support to the MSME sector, which has helped benefit crores of people across the country.

RAMP Scheme:

- Prime Minister launched the 'Raising and Accelerating MSME Performance' (RAMP) scheme, with an outlay of around Rs 6,000 crore.
- It aims to scale up the implementation capacity and coverage of MSMEs in the states, with impact enhancement of existing MSME schemes.
- It will complement the Aatmanirbhar Bharat Abhiyan by fostering innovation, encouraging ideation, incubating new business and entrepreneurship by developing quality standards, improving practices and processes, enhancing market access, deploying technological tools and Industry 4.0 to make MSMEs competitive and self-reliant.

CBFTE Scheme:

- Prime Minister launched the 'Capacity Building of First-Time MSME Exporters' (CBFTE) scheme, which aims to encourage MSMEs to offer products and services of international standards for the global market.
- This will enhance the participation of Indian MSMEs in the global value chain and help them realise their export potential.

PMEGP:

- He also launched new features of the 'Prime Minister's Employment Generation Programme' (PMEGP).
- These include an increase in the maximum project cost to ₹50 lakh (from ₹25 lakh) for the manufacturing sector and ₹20 lakh (from Rs 10 lakh) in the service sector and the inclusion of applicants from aspirational districts and transgenders in the Special Category applicants for availing higher subsidies.
- Also, handholding support is being provided to applicants/entrepreneurs through the engagement of banking, technical and marketing experts.

MSME Idea Hackathon, 2022:

- He also announced the results of the MSME Idea Hackathon, 2022.
- Launched on March 10, 2022 this Hackathon is aimed at promoting and supporting the untapped creativity of individuals, promoting adoption of latest technologies and innovation among MSMEs.
- The selected incubatee ideas will be provided funding support of up to Rs 15 lakhs per approved idea.

National MSME Awards 2022:

- Prime Minister will also distribute the National MSME Awards 2022.
- The award is a recognition of the contributions of MSMEs, States/UTs, aspirational districts and banks for their outstanding performance in the growth and development of India's dynamic MSME sector.

GOVT REVAMPS BANKS BOARD INTO FINANCIAL SERVICES INSTITUTIONS BUREAU

Why in news?

- The Appointments Committee of the Cabinet (ACC) has approved a government resolution for establishing the Financial Services Institutions Bureau (FSIB) in place of the Banks Board Bureau (BBB).

Composition:

- The ACC has also approved the appointment of Bhanu Pratap Sharma, former Chairman, BBB, as initial Chairperson of FSIB for a term of two years from the date of notification of government resolution or until further orders.
- Other members of the headhunter are Animesh Chauhan, former Chairman and Managing Director of erstwhile Oriental Bank of Commerce, RBI's ex-executive director Deepak Singhal and Shailendra Bhandari, former MD of erstwhile ING Vysya Bank.

Selection function of FSIB:

- Guidelines for selection of general managers and directors of public sector general insurance companies have been made part of FSIB.
- The selection process of top officials of public sector insurance companies was in limbo in the wake of the Delhi High Court decision to strike down the power of BBB to select directors and chiefs of PSU insurers.

About BBB:

- The Prime Minister, in 2016, approved the constitution of BBB as a body of eminent professionals and officials to make recommendations for appointment of whole-time directors as well as non-executive chairpersons of public sector banks (PSBs) and state-owned financial institutions.
- It was also entrusted with the task of engaging with the board of directors of all PSBs to formulate appropriate strategies for their growth and development.

What's next?

- The Appointments Committee of the Cabinet (ACC) has asked the Department of Financial Services to carry out necessary modifications in the Nationalized Banks (Management and Miscellaneous Provisions) Scheme of 1970/1980 with the approval of Finance Minister, and then notify the government resolution for establishing FSIB as a single entity for making recommendations for appointments of whole time directors and non-executive chairman of banks and financial institutions.

AGENDA FOR THE GST REGIME

Why in news?

- Recently, the Goods and Services Tax (GST) Council, chaired by Union Finance Minister met for the first time in 2022.
- The Council has okayed three ministerial groups' reports, one of which will lead to changes in the tax rates applicable on several items.

What are the goods and services whose rates have been increased?

- Based on recommendations made by a Group of Ministers (GoM) led by Karnataka Chief Minister Basavaraj Bommai, the GST Council has scrapped exemptions on several goods and services, done away with concessional rates granted for a few products, and altered tax rates up or down in other cases.
- Health care devices such as orthopaedic splints, intraocular lens, ostomy appliances, will now be taxed at 5% instead of 12%.
- The use of in-vitro fertilisation (IVF) services have been exempted, truck rentals for goods will be taxed at 12% (down from 18%) and the GST on ropeways has been lowered from 18% to 5%. However, stem cell preservation services will no longer be tax-free.
- Hospital room rents over ₹5,000 a day, excluding patients in intensive care units or ICUs, shall now be taxed at 5%.
- Tetra Pak, used for an increasing number of goods as an alternative to plastic packaging, will now be taxed at 18%, from 12% which could nudge up costs of several consumer goods. The same 18% rate will apply to tar of all varieties so expect road building costs to rise as well.
- The Council also hiked rates on over 17 goods and services, where the final products had a lower tax rate than their inputs and led to an anomaly referred to as inverted duty structures.
- Last but not the least, the GST levied on cut and polished diamonds has been raised from 0.25% to 1.5%.

Why does it matter?

- The Reserve Bank of India expects India's inflation rate, which hit an eight-year high of 7.8% in April and remained over 7% in May, to average 6.7% in 2022-23.
- With all these rate changes slated to kick in from July 18, any impact can only be gauged when August consumer inflation numbers are released in the second week of September. Even then, with prices of several commodities, including crude oil, remaining elevated, distilling the effect of new GST rates on price rise may not be simple.
- Moreover, the panel led by Mr. Bommai has been granted three more months to delve into its other mandate that could have a wider impact on

- consumers and businesses, rationalising the multiple GST rate slabs such as 5%, 12%, 18% and 28% and raising levies to bolster revenues that have fallen short of expectations.
- Part of the reason for dipping revenues, apart from a slowing economy in recent years, was the repeated reduction in several items' GST rates ahead of critical elections. However, inflation worries do not make this an opportune time for carrying out broader rate hikes.

What lies ahead?

- The Council will meet again in August to finalise the GST rates for online gaming, horse racing and casinos. It may also kick off the process to form an appellate tribunal for resolving GST disputes, envisaged since its launch in July 2017.
- With over a dozen States urging the Centre to continue the GST compensation paid to them for the first five years of the GST regime as revenue flows have been hit by the pandemic, it is hoped that clarity comes through on this issue by the August meeting.
- Any extension of assured revenues to States could, however, translate into further pain for consumers and industry, who already have to fork out the GST Compensation Cess levied on products such as cars and soft drinks, till March 2026, instead of the June 2022 sunset promised earlier.

GI TAG FOR MAYURBHANJ'S SUPERFOOD 'ANT CHUTNEY'

Why in news?

- In Odisha, scientists are now fine-tuning their research to make a presentation for the Geographical Indications (GI) registry of Kai chutney.
- Applied under food category, the GI tag will help develop a structured hygiene protocol in the preparation of Kai chutney for standard wider use.

GI Tag:

- Geographical Indications labels enhance the reputation and value of local products and support local businesses.

About Kai ants:

- Weaver ants, *Oecophyllasmaragdina*, are abundantly found in Mayurbhanj throughout the year. They make nests with leaves of host trees.
- The Kai family consists of three category members – workers, major workers and queens. Workers and major workers are mostly orange-colored. Kais feed on small insects and other invertebrates, their prey being mainly beetles, flies and hymenoptera.

What is Kai Chutney?

- The weaver ants are popular among the people, mostly of the tribes, of Mayurbhanj district in Odisha for the mouth-watering dish made of them, the Kai chutney.

- This savoury food item, rich in proteins, calcium, zinc, vitamin B-12, iron, magnesium, potassium, sodium, copper, fibre and 18 amino acids, is known to boost the immune system and keep diseases at bay.

Medicinal properties:

- The tribes of Mayurbhanj consume Kai chutney or soup to get rid of flu, common cold, whooping cough, to increase appetite and enhance eyesight naturally without corrective eye wear and to treat joint pain and stomach diseases, and for the development of a healthy brain and the nervous system.
- The tribal healers also prepare medicinal oil by dipping the collected Kais in pure mustard oil. After 30 days, this oil is used as baby oil and externally used to cure rheumatism, gout, ringworm infection and skin diseases.

ODISHA TOPS FIRST NATIONAL FOOD SECURITY RANKING, TRIPURA BEST AMONG SMALLER STATES

Why in news?

- Recently, the Union Food Minister released the first State Ranking Index for implementation of the National Food Security Act, 2013.

Key Findings:

- Overall, Odisha, Uttar Pradesh and Andhra Pradesh scored the highest and secured the top three positions in the Index. The states performed very well on all the parameters and indicators governing the implementation of NFSA through TPDS (targeted public distribution system).
- Among the special category states (the northeastern, Himalayan, and the Island states), Tripura, Himachal Pradesh and Sikkim obtained the top positions.
- Despite the logistical limitations in these areas, they displayed a high degree of accomplishment in competing with the general category states as well.

Parameters:

- The states and UTs were ranked based on three parameters for the year 2022.
- The first measures "coverage of NFSA, rightful targeting, and implementation of all provisions under NFSA" while the second "analyzes the delivery platform while considering the allocation of foodgrains, their movement, and last-mile delivery to Fair Price Shops (FPS)".
- The third "focuses on nutrition initiatives of the department".

Legal right:

- The NFSA provides a legal right to persons belonging to "eligible households" to receive foodgrains at subsidised price – rice at ₹3/kg, wheat at ₹2/kg and coarse grain at ₹1/kg – under the TPDS. These are called central issue prices (CIPs).

CENTRE TO PROMOTE DRAGON FRUIT CULTIVATION

Why in news?

- Following in the footsteps of the Gujarat and Haryana governments, the Centre has decided to promote the cultivation of dragon fruit, known as a "super fruit" for its health benefits.

Details:

- The Centre feels that considering the cost effectiveness and global demand for the fruit due to its nutritional values, its cultivation can be expanded in India.
- At present, this exotic fruit is cultivated in 3,000 hectares; the plan is to increase cultivation to 50,000 hectares in five years.

Cultivation in Indian States:

- The Gujarat government recently renamed dragon fruit as kamlam (lotus) and announced an incentive for farmers who cultivate it.
- The Haryana government also provides a grant for farmers who are ready to plant this exotic fruit variety.

Nutritional value:

- The fruit is considered good for diabetic patients, low in calories and high in nutrients like iron, calcium, potassium and zinc.

Assistance:

- This fruit can be cultivated in degraded and rainfed land.
- The Centre will assist States in providing good quality planting materials to farmers.
- The Centre can also provide specific target-based help to States and farmers under the Mission for Integrated Development of Horticulture (MIDH).
- Processing infrastructure can also be developed with the help of the Food Processing Ministry. Its cultivation will be beneficial for farmers and consumers.

What's next?

- The dragon fruit is now sold at a price of Rs. 400 per kg and the effort is to make it available to consumers for Rs. 100 per kg.

PLATFORM OF PLATFORMS (POP) UNDER ENAM

Why in news?

- Recently, the Union Minister of Agriculture and Farmers Welfare, launched the Platform of Platforms (POP) under the National Agriculture Market (e-NAM) on the sidelines of the State Agriculture and Horticulture Ministers' Conference in Bengaluru.
- Equity grant of over Rs 37 crore was also released to 1,018 Farmer Producer Organizations (FPOs) that will benefit about 3.5 lakh farmers.

Key Highlights:

- With the introduction of POP, farmers will be facilitated to sell the produce outside their state borders.
- This will increase farmers' digital access to multiple markets, buyers and service providers and bring transparency in business transactions with the aim of improving price search mechanism and quality commensurate price realisation.
- 41 service providers from different platforms are covered under POP facilitating various value chain services like trading, quality checks, warehousing, fintech, market information, transportation etc.
- The PoP will create a digital ecosystem, which will benefit from the expertise of different platforms in different segments of the agricultural value chain.

Stakeholders:

- e-NAM integrates the platform of Service Providers as "Platform of Platforms" which includes Composite Service Providers (Service Providers who provide holistic services for trading of agricultural produce including quality analysis, trading, payment systems and logistics), Logistics Service Provider, Quality Assurance Service Provider, Cleaning, Grading, Sorting & Packaging Service Provider, Warehousing Facility Service Provider, Agricultural Input Service Provider, Technology Enabled Finance & Insurance Service Provider, Information Dissemination Portal (Advisory Services, crop forecasting, weather updates, capacity building for farmers etc.) and other platforms (e-commerce, international agri-business platforms, barter, private market platforms etc.).

What POP offers?

- The inclusion of various service providers not only adds to the value of the e-NAM platform, but also gives the users of the platform options to avail services from different service providers.
- It enables farmers, FPOs, traders and other stakeholders to access a wide variety of goods and services across the agricultural value chain through a single window, thereby giving more options to the stakeholders.
- Moreover, while selecting a good quality Goods/ Service Provider, it saves the time and labour of the stakeholders.

Equity grant to Farmer Producer Organizations (FPOs):

- He also released an equity grant of more than Rs 37 crore to 1,018 FPOs under the CSS which will benefit about 3.5 lakh farmers leading to the goal of setting up of 10 thousand FPOs.
- The Producer Members' equity, supplemented by a similar equity grant from the Central Government, would strengthen the financial base of the FPOs and help them to avail loans from financial institutions

- for their projects and working capital requirements for business development.
- Under the scheme, upto Rs. 18 lakh financial aid per FPO will be provided for a period of 3 years. In addition, a loan of Rs. 2,000 for each farmer member of the FPO within a limit of Rs.15 lakh per FPO will be available.
 - There is also a provision of project loan or equivalent grant from any eligible lending institution of up to Rs.2 crore per FPO.

DEPARTMENT OF CONSUMER AFFAIRS LAUNCHES 'JAGRITI'

Why in news?

- Recently, the Department of Consumer Affairs (DoCA) has launched "Jagriti", a mascot for empowering consumers and generating awareness of their rights.
- Jagriti will be projected as an empowered consumer who is spreading awareness about consumer rights & addressing solutions to the problems faced by the consumers.

Key Highlights:

- The "Jagriti" mascot will be used to generate consumer awareness about various themes of the Department like provisions of Consumer Protection Act 2019, Hallmarking, National Consumer Helpline toll free number 1915, provisions of weights & measures Act, decisions of the Central Consumer Protection Authority and testimonials by consumers on grievance redressal.
- By bringing the Jagriti Mascot, DoCA aims to strengthen its consumer awareness campaign presence in digital and multimedia and reinforce a young empowered and informed consumer as a top-of-mind consumer rights awareness recall brand.

"JagoGrahakJago"

- Jagriti mascot shall be shown along with tagline "JagoGrahakJago" in all its media campaigns.
- The two are new synonymous with young aware consumers and bring sharp focus to consumer rights knowledge and movement.

RBI ADOPTS FOUR-TIERED REGULATORY FOR URBAN COOPERATIVE BANKS

Why in news?

- Recently, the Reserve Bank of India has issued a revised regulatory framework for Urban Cooperative Banks as per the recommendations of the expert committee formed under the Chairmanship of RBI's former Deputy Governor Mr. N S Vishwanathan.
- The RBI has decided to adopt a simple four-tiered regulatory framework based on the size of deposits of the banks and their area of operations.

Key Highlights:

- A minimum net worth of two crore rupees for Tier 1 UCBs operating in a single district and five crore rupees for all other UCBs has been stipulated.
- In order to boost growth opportunities in the sector, RBI has decided to introduce an automatic route for branch expansion for UCBs, allowing them to open new branches as per the revised Financially Sound and Well Managed criteria.
- With respect to housing loans, RBI has decided to assign the risk weights on the basis of Loan to Value Ratio alone which would result in capital savings.
- RBI has said that the capital requirements for UCBs have been suitably recalibrated to make the sector more robust and to support its orderly growth. The apex bank has added that a suitable glide path has also been provided in the framework for a non-disruptive transformation of the sector.
- RBI has further stated the measures for strengthening the banking sector are also being supplemented by offering more operational flexibility to strong UCBs to serve their desired role in credit intermediation.

Way Forward:

- This is likely to strengthen the financial soundness of existing UCBs.

NITI AAYOG RELEASES REPORT ON DIGITAL BANKS

Why in news?

- Recently, NITI Aayog released its report on digital banks, offering a template and roadmap for licencing and regulatory regimes.
- The report focuses on avoiding any regulatory or policy arbitrage and offers a level playing field to incumbents as well as competitors.

Recommendations:

- The report recommends a carefully calibrated approach, comprising the following steps:
 - a) Issue of a restricted digital bank licence (to a given applicant) (the license would be restricted in terms of volume/value of customers serviced and the like).
 - b) Enlistment (of the licensee) in a regulatory sandbox framework enacted by the Reserve Bank of India.
 - c) Issue of a 'full-scale' digital bank licence (contingent on satisfactory performance of the licensee in the regulatory sandbox, including salient, prudential and technological risk management).
- The report also maps prevalent business models in this domain and highlights the challenges presented by the 'partnership model' of neo-banking—which has emerged in India due to a regulatory vacuum and in the absence of a digital bank licence.

Methodology:

- The methodology for the licensing and regulatory template offered by the report is based on an equally weighted 'digital bank regulatory index'.

- This comprises four factors—(i) entry barriers; (ii) competition; (iii) business restrictions; and (iv) technological neutrality.
- The elements of these four factors are then mapped against the five benchmark jurisdictions of Singapore, Hong Kong, United Kingdom, Malaysia, Australia and South Korea.

The Context for the Case of Digital Banks in India: Financial Inclusion:

- In recent years, India has made rapid strides in furthering financial inclusion, catalysed by the Pradhan Mantri Jan Dhan Yojana and India Stack.
- However, credit penetration remains a policy challenge, especially for the nation's 63-million-odd MSMEs that contribute 30% to GDP, 45% to manufacturing output, and 40% to exports, while creating employment for a significant section of the population.
- Over the past few years, due to digitization ushered in by the Jan Dan-Aadhar-Mobile (JAM) trinity and Aadhaar financial inclusion has become a reality for Indians. This has only been furthered by the Unified Payments Interface (UPI), which has witnessed extraordinary adoption. UPI recorded over 4.2 billion transactions worth ₹7.7 trillion in October 2021.
- A 'whole-of-India approach' towards financial inclusion has also resulted in Direct Benefit Transfer through apps such as PM-KISAN and extending microcredit facilities to street vendors through PM-SVANIDHI.
- India has also taken steps towards operationalizing its own version of 'open banking' through the Account Aggregator (AA) regulatory framework enacted by the Reserve Bank of India. Once commercially deployed, the AA framework is envisaged to catalyse credit deepening among groups that have been hitherto under-served.

Challenges:

- The success that India has witnessed on the payments front is yet to be replicated when it comes to the credit needs of its micro, small and medium businesses.
- The current credit gap and the business and policy constraints reveal a need for leveraging technology effectively to cater to these needs and bring the under-served further within the formal financial fold.

STANDING COMMITTEE ON FOOD, CONSUMER AFFAIRS AND PUBLIC DISTRIBUTION

Why in news?

- Recently, the Standing Committee on Food, Consumer Affairs and Public Distribution, headed by TMC member Sudip Bandyopadhyay, submitted its report.

Key recommendations:

- It has recommended streamlining the functioning of helpline numbers to address grievances of PDS

beneficiaries and installation of CCTV cameras at ration shops to monitor distribution and diversion.

- It has also recommended that the government should make independent surprise visits and inspections at ration shops, also called fair price shops (FPSs).
- It also recommended setting up more (QCCs) expeditiously for addressing the issue of quality check/control comprehensively and to prevent losses arising due to damaged foodgrains stock from procurement to distribution.

Issues:

- This could be the handiwork of some intermediaries which leads to diversion of good quality foodgrains and making the poor people getting inferior quality of foodgrains.
- Sometimes, beneficiaries cannot communicate their grievances to the agencies concerned.
- The Committee observed that the 24X7 toll-free grievance redressal at telephone numbers 1967 and 1800 set up in different states are not helpful in solving day-to-day problems being faced by the beneficiaries.
- Proper functioning of these helpline numbers will enhance transparency and public accountability in the implementation of the Public Distribution System (PDS).

Standing Committee on Food, Consumer Affairs and Public Distribution:

- The Standing Committee on Food Consumer Affairs and Public Distribution is one of the 24 Departmentally Related Standing Committees. It is serviced by Lok Sabha Secretariat.
- The Committee consists of 31 Members, i.e., 21 Members from Lok Sabha, nominated by the Speaker, Lok Sabha, from amongst the Members of Lok Sabha and 10 Members from Rajya Sabha nominated by the Chairman, Rajya Sabha from amongst the Members of Rajya Sabha.
- The Chairman of the Committee is appointed by the Speaker from amongst the Lok Sabha Members of the Committee.

INDIA (TRADE AND INVESTMENT) ALL PARTY PARLIAMENTARY GROUP (APPG)

Why in news?

- A new cross-party UK parliamentary panel has been created to promote trade, investment and people-to-people ties with India, backed up by British Indian think tank, 1928 Institute.
- The India (Trade and Investment) All Party Parliamentary Group (APPG) was formally registered as part of celebrations of the 75th anniversary of India's independence and is made up of 25 members of Parliament and peers of different political affiliations.

APPGs:

- APPGs are informal, cross-party groups in the UK formed by MPs and members of the House of Lords who share a common interest in a particular policy area, region or country and have no official status within Parliament.

Mandate:

- With a stated goal to promote trade and investment between India and the UK for the mutual betterment of their citizens, whilst building an inclusive living bridge between the two countries, the new APPG hopes to support the ongoing India-UK free trade agreement (FTA) negotiations and promote its benefits once concluded.
- Given 75 years of India's Independence, the creation of an All-Party Parliamentary Group focused on India will set the tempo between the UK Parliament and India/Indians.

Key Highlights:

- From trips across different parts of Britain to visits to India, the India (Trade & Investment) APPG said it will work with diverse stakeholders and encourage beneficial collaborations.
- This APPG will be the conduit which not only connects UK and Indian policymakers but connects businesses and entrepreneurs to drive growth.
- The APPG will ensure that dialogue and engagement will cut across all levels of business, particularly encouraging a wider lens on female led business and start-ups.

Way Forward:

- The new APPG will officially kick-start its activities when Parliament resumes after its summer recess under a new Prime Minister in September.

BPRL TO DEVELOP BM-SEAL-11 PROJECT IN BRAZIL

Why in news?

- Recently, the Cabinet Committee on Economic Affairs has approved additional investment of USD 1,600 million (about ₹12,000 crore) by Bharat PetroResources Ltd. (BPRL), a wholly owned subsidiary of Bharat Petroleum Corporation Limited (BPCL) for development of BM-SEAL-11 Concession Project in Brazil.

The CCEA also approved following:

- To increase in the limit of equity investment by BPCL in BPRL and Authorised Share Capital of the Company from ₹15,000 crore to ₹20,000 crore (to be subscribed by BPCL from time to time).
- To authorise increase in the limit of equity investment by BPRL International BV in International BV BrasilPetroleoLimitada, through intermediate WOS, to ₹15,000 crore from the current limit of ₹5,000 crore that is an increase of ₹10,000 crore.

Significance:

This will help in:

- accessing to equity oil to strengthen India's energy security.
- diversifying India's crude oil supply and Indian oil companies have expressed interest in sourcing more crude oil from Brazil.
- Strengthening India's foothold in Brazil, which will further open business avenues in neighbouring Latin American countries.
- Further strengthening the bilateral ties between the countries.

Background:

- BPRL has 40% Participating Interest (PI) in this Concession along with Petrobras, National oil company of Brazil, as the Operator with 60% Participating Interest.
- BPRL has been associated with exploration and development of this project in Brazil since 2008.

Way Forward:

- The start of production from BM-SEAL-11 project is expected from 2026-27.

11TH AGRICULTURE CENSUS IN INDIA

Why in news?

- The Eleventh Agricultural Census (2021-22) was launched recently by the Union Minister for Agriculture and Farmers Welfare.

About Agriculture Census:

- Agriculture Census is conducted every 5 years, which is being undertaken now after delay due to corona pandemic.
- Agricultural Census is the main source of information on a variety of agricultural parameters at a relatively minute level, such as the number and area of operational holdings, their size, class-wise distribution, land use, tenancy and cropping pattern, etc.

Digitized data:

- This is the first time that data collection for agricultural census will be conducted on smart phones and tablets, so that data is available in time.
- Most of the States have digitized their land records and surveys, which will further accelerate the collection of agricultural census data.
- The use of digitized land records and the use of mobile apps for data collection will enable the creation of a database of operational holdings in the country.

New initiatives:

- The new initiatives include use of digital land records like land title records and survey reports, collection of data through app/software using smartphone/tablet, complete enumeration of all villages in states with non-land records during Phase-I as done in states

having land records, and real time monitoring of progress and processing.

Way Forward:

- The field work of agricultural census will start in August 2022.
- This computation will bring huge benefits in a vast and agricultural country like India.

TREND ON FOREIGN DIRECT INVESTMENT (FDI) IN INDIA

Context:

- As per the UNCTAD World Investment Report (WIR) 2022, in its analysis of the global trends in FDI inflows, India has improved one position to 7th rank among the top 20 host economies for 2021.
- India is rapidly emerging as a preferred country for foreign investments in the manufacturing sector. FDI Equity inflow in Manufacturing Sectors have increased by 76% in FY 2021-22 (USD 21.34 billion) compared to previous FY 2020-21 (USD 12.09 billion).

Transformative reforms:

- The Government has implemented several transformative reforms under the FDI policy regime across sectors such as insurance, defence, telecom, financial services, pharmaceuticals, retail trading, e-commerce, construction & development, civil aviation, manufacturing etc.
- Despite the ongoing pandemic and global developments, India received the highest annual FDI inflows of USD 84,835 million in FY 21-22 overtaking last year's FDI by USD 2.87 billion.
- Earlier, FDI inflows increased from USD 74,391 million in FY 19-20 to USD 81,973 million in FY 20-21.
- The Government continues to liberalize investment restrictions, eliminate regulatory barriers, nurture international relations and improve business environment.
- While foreign investments are permitted under the automatic route in most sectors/activities, due to strategic reasons certain investments are either restricted or permitted under the Government approval route through a screening mechanism as per the prescribed framework.

Countries:

- During FY 2021-22 FDI has been reported from 101 countries, whereas, it was reported from 97 countries during previous FY 2020-21.

Top 5 nations:

- Singapore (27.01%) and USA (17.94%) have emerged as top 2 sourcing nations in FDI equity flows into India in FY2021-22 followed by Mauritius (15.98%), Netherland (7.86%) and Switzerland (7.31%).

Top 5 sectors:

- Top 5 sectors receiving highest FDI Equity Inflow during FY 2021-22 are Computer Software & Hardware

(24.60%), Services Sector (Fin., Banking, Insurance, Non Fin/Business, Outsourcing, R&D, Courier, Tech. Testing and Analysis, Other) (12.13%), Automobile Industry (11.89%), Trading 7.72% and Construction (Infrastructure) Activities (5.52%).

Top 5 States:

- Top 5 States receiving highest FDI Equity Inflow during FY 2021-22 are Karnataka (37.55%), Maharashtra (26.26%), Delhi (13.93%), Tamil Nadu (5.10%) and Haryana (4.76%)

FDI limits:

- In India FDI up to 100% is allowed in non-critical sectors through the automatic route, not requiring security clearance from the Ministry of Home Affairs (MHA).
- Prior government approval or security clearance from MHA is required for investments in sensitive sectors such as defence, media, telecommunication, satellites, private security agencies, civil aviation and mining, besides any investment from Pakistan and Bangladesh.
- All foreign investments are required to be in compliance with the applicable entry route, sectoral cap, attendant conditions, sectoral laws, Companies Act, 2013 and rules thereunder, pricing guidelines, documentation and reporting requirements.
- The FDI policy regime continues to welcome all investments in the country subject to compliance of applicable entry conditions and rules/regulations.

SECURITY

INDIAN NAVY'S INS SATPURA AND P8I IN RIMPAC

Why in news?

- Recently, Indian Navy participated in the 28th edition of the biennial Rim of Pacific (RIMPAC-22), the world's largest international maritime exercise.
- It was organised at Pearl Harbour in Hawaii.

Theme:

- The theme of RIMPAC 2022 is 'capable, adaptive, partners.'

Harbour phase:

- Indian Navy's indigenous Frigate INS Satpura and P8I LRMASW aircraft participated in it.
- The harbour phase of the exercise saw participation in multiple symposiums, exercise planning discussions and sports competitions.

Details:

- The exercise which spans over six weeks of intense operations and training aimed at enhancing interoperability and building trust among Navies of friendly foreign countries.

- ⇒ 28 countries are participating in the multi-dimensional exercise.
- ⇒ The sea phase commences on 12 Jul 22 and will culminate with the closing ceremony on 04 Aug 22.

RIMPAC:

- ⇒ RIMPAC is one of the largest biennial multilateral Naval Exercises, which is led by US.
- ⇒ The RIMPAC started in 1971 as an annual exercise by the US, Australia, and Canada but from 1974, maritime exercise became a biennial event.
- ⇒ India first participated in RIMPAC in 2014.

DEFENCE EXPORTS TOUCH RS. 13,000 CRORE**Why in news?**

- ⇒ India's defence exports for 2021-22 were estimated at ₹13,000 crore, the highest ever.
- ⇒ The U.S. was a major buyer, as also nations in Southeast Asia, West Asia and Africa.

Key Achievements:

- ⇒ The private sector accounted for 70% of the exports, while public sector firms accounted for the rest. Earlier, the private sector used to account for 90% but now the share of defence public sector units had gone up.
- ⇒ While India's defence imports from the U.S. have gone up significantly in recent years, Indian companies have been increasingly becoming part of the supply chains of U.S. defence companies.
- ⇒ In January, India signed a \$374.96-million deal with the Philippines, its single biggest defence export order, for the supply of three batteries of shore-based anti-ship variant of the BrahMos supersonic cruise missile.

AI in defence:

- ⇒ In 2018, the Defence Ministry had created a task force to work out an action plan to prepare the armed forces for AI and the challenges.
- ⇒ The Defence Minister Rajnath Singh will inaugurate a symposium and exhibition on "Artificial Intelligence in defence", organised by the Department of Defence Production.
- ⇒ 75 newly developed AI products and technologies, having applications in defence, would be launched.
- ⇒ The products to be launched are in the domains of automation, unmanned, robotics systems; cyber security; human behaviour analysis; intelligent monitoring system; logistics and supply chain management, speech/voice analysis and Command, Control, Communication, Computer & Intelligence, Surveillance & Reconnaissance (C4ISR) systems and operational data analytics.

DEF MINISTRY SETS UP COMMITTEE TO CONDUCT PERFORMANCE & EFFICIENCY AUDIT**Why in news?**

- ⇒ The Defence Ministry has set up an apex committee to conduct 'performance and efficiency' audit of capital procurements, logistics, inventory and maintenance of assets of the armed forces.

Agenda:

- ⇒ The committee, headed by the Defence secretary, will advise Defence Minister on measures for overall improvement in strengthening of internal oversight and risk management framework in various aspects of functioning of the ministry.

Composition:

- ⇒ The panel comprises Vice Chiefs of the three services, Secretary Defence (finance), Chief of Integrated Staff Committee, Controller General of Defence Accounts and Director General (acquisition) and other senior officials of the Ministry, including representatives from the Defence Research and Development Organisation.

Key Highlights:

- ⇒ The setting up of the committee comes amid efforts to streamline the military procurement procedures and focus on enhancing the country's overall combat readiness.
- ⇒ It is a major shift from the existing transaction-based compliance audit to carry out an outcome-based performance and efficiency audit.
- ⇒ The broad areas that have been identified for the conduct of performance and efficiency audit include defence capital procurements, provisioning, logistics, inventory levels, maintenance of platforms/assets, role and performance of authority holding sealed particulars etc.
- ⇒ The apex committee can also recommend any other specific area for performance and efficiency audit.

Way Forward:

- ⇒ The committee will identify specific areas for the conduct of performance and audit by controller general of defence accounts and monitor performance audit reports and action taken thereon.

KILO CLASS SUBMARINE INS SINDHUDHVAJ DECOMMISSIONED**Why in news?**

- ⇒ Recently, the Navy's Kilo-class submarine, INS Sindhudhvaj, was decommissioned from service at Visakhapatnam after 35 years in service.
- ⇒ With this, the Navy now has 15 conventional submarines in service.

10 Kilo-class submarines:

- ⇒ With the retirement of INS Sindhudhvaj, the 10 Kilo-class submarines that India bought from Russia between 1986 and 2000 are now down to seven conventional boats (as the Navy calls submarines).

- ⇒ INS Sindhurakshak sank in Mumbai after a cataclysmic explosion in August 2013 that killed all 18 sailors on board.
- ⇒ INS Sindhuvir was transferred to the Myanmar navy in March 2020 as a goodwill gesture.
- ⇒ One more Kilo-class submarine is earmarked to be given to the Defence Research and Development Organisation for use as a test-bed in developing the air-independent propulsion that will power 12 indigenous submarines to be built in the future.

Salient features:

- ⇒ The Kilo-class boats are called the Sindhughosh-class, after the lead vessel in the series.
- ⇒ They are diesel-electric submarines that displace 3,000 tonnes, can dive to a depth of 300 metres, have a top speed of 18 knots, and can operate solo for 45 days with a crew of 53.
- ⇒ The Kilo-class is a highly trusted conventional boat, with an estimated 62 in service in nine navies. They were the Indian Navy's first submarines that could fire anti-ship and land-attack cruise missiles from underwater.

French Scorpene submarines:

- ⇒ Incrementally replacing the Kilo-class boats are six French Scorpene submarines, being built under licence by Mazagon Dock Shipbuilders in Mumbai.
- ⇒ Termed the Kalvari-class after the lead vessel, four have been inducted, while the remaining two are likely to join the fleet before the end of 2023.

Other conventional submarines:

- ⇒ In addition to seven remaining Kilo-class boats, the Navy is operating four Shishumar-class conventional submarines, which are German-designed.
- ⇒ The Navy has also leased an Amur-class nuclear-powered submarine from Russia, to learn the ropes of operating nuclear-powered boats.

Project 75-I:

- ⇒ With the Navy's requirement of conventional submarines standing at 24, there is critical need to expedite the planned acquisition of six more conventional submarines under Project 75-I.
- ⇒ With delays in submarine induction, the Kilo submarines and HDW submarines are being put through the Medium Refit Life Certification (MRLC) process to extend their service life.

PM MODI UNVEILS 'SPRINT CHALLENGES' FOR INDIAN NAVY

Why in news?

- ⇒ Recently, Prime Minister unveiled 'SPRINT Challenges', aimed at giving a boost to the usage of indigenous technology in Indian Navy, during Naval Innovation and Indigenisation Organisation (NIIO) seminar 'Swavlamban' in New Delhi.

What is SPRINT?

- ⇒ In a bid to achieve 'Aatmanirbharta' in defence and as part of 'AzadikaAmritMahotsav', NIIO, in conjunction with the Defence Innovation Organisation (DIO), aims to induct at least 75 new indigenous technologies/products into the Indian Navy.
- ⇒ This collaborative project is named SPRINT – Supporting Pole-Vaulting in R&D through iDEX (Innovations for Defence Excellence), NIIO and TDAC (Technology Development Acceleration Cell).

Background:

- ⇒ In line with the 'Aatmanirbhar Bharat' campaign, the Indian Navy spent over 64% of its capital budget in domestic procurement in the last financial year and it is expected to increase to 70% in the current financial year.
- ⇒ With active participation of the private sector, MSMEs and start-ups, innovation in the defence sector is being promoted through several projects under the iDEX initiative and 'Technology Development Fund'.

10% QUOTA FOR AGNIVEERS IN CENTRAL ARMED POLICE FORCES

Why in news?

- ⇒ The Union Government has given 'in-principle approval' for 10 per cent reservation in the Central Armed Police Forces like the CRPF and BSF for 'Agniveers' after their service in the military.
- ⇒ A whopping 30.41 lakh candidates appeared against 60,210 posts of constables in the Central Armed Police Forces (CAPFs).

'Agnipath' scheme:

- ⇒ The Centre on 14 June had unveiled the ambitious 'Agnipath' scheme for the recruitment of youths aged between 17-and-a-half years and 21 years in the Army, the Navy and the Air Force, largely on a four-year short-term contractual basis.
- ⇒ Those recruited under the scheme will be known as 'Agniveers'. After the completion of the four-year tenure, 25 per cent of the recruits from each batch will be offered regular service.
- ⇒ There have been protests by job aspiring youths against the scheme.
- ⇒ Subsequently, the Union Home Ministry had announced that 10 per cent vacancies for recruitment in the CAPFs or the paramilitary forces will be reserved for the 'Agniveers'.

Key Highlights:

- ⇒ An in-principle approval has been given for reservation of 10 per cent of vacancies for ex-Agniveers in the recruitment to the post of constables (general duty) and rifleman in the CAPFs and the Assam Rifles.
- ⇒ Relaxation in upper age limit and exemption from the physical efficiency test will also be given.

KARGIL VIJAY DIWAS 2022

Why in news?

- India today commemorated 23 years of its victory over Pakistan in the Kargil War, saluting the supreme sacrifices and valour of the fallen heroes in recapturing several mountain heights seized by Pakistani intruders in Kashmir.
- Operation Vijay came to a successful end on July 26, 1999. Every year on July 26, events and programmes are held across the country.

What was the reason for Kargil War?

- The Kargil War was fought against intruders from Pakistan, who had crossed the Line of Control (LoC) into Indian territory during the winters of 1998.
- They took up residence in fortified defences that overlooked the NH 1A in the Drass and Batalik Sectors of Kargil in the Ladakh region.
- In 1999, the war went on from May 8 to July 26 in 1999, when India successfully completed Operation Vijay.

What Pakistan expected out of this situation?

- Because of separatist actions in Kashmir, some of which were funded by Pakistan, tensions grew during the 1990s. The Lahore Declaration was an attempt by India and Pakistan to find a peaceful bilateral resolution to the issue. It was signed in February 1999.
- However, some of the paramilitary elements of the Pakistani Armed Forces were training surreptitiously in Indian territory while some of them were operating under the pretence of mujahideen.
- By severing the connection between Kashmir and Ladakh, Pakistan hoped to force the Indian military to leave the Siachen Glacier. If they had been successful, India would have been forced to discuss a resolution to the larger Kashmir problem.
- Pakistan X Corps Commander Lieutenant General Mahmud Ahmad, Major Generals Javed Hasan and Ashraf Rashid, and then-Army General Pervez Musharraf of Pakistan masterminded the unlawful Pakistani annexation of Kargil. Nawaz Sharif, the then prime minister of Pakistan, claimed to be not aware of this operation.

India's Strategy:

- India used conventional military force to combat the militarised insurgency by Pakistan. Kargil offered a tactical puzzle piece for military strategists as well. The direct-firing weapon was used for the first time by artillery.
- The Indian Air Force was instructed not to cross the LoC at Kargil. Fighter pilots had to come up with new angles of attack because the majority of the enemy was virtually on the LoC.
- Pakistani forces were ultimately defeated by the bravery of the Indian forces, and on July 26, 1999, they

were forced to withdraw from the Indian territory they had been occupying.

**INDIA'S FIRST INDIGENOUS INS
VIKRANT HANDED OVER TO NAVY**

Why in news?

- Recently, Indian Navy created maritime history by taking the delivery of the prestigious indigenous aircraft carrier Vikrant from its builder Cochin Shipyard Limited (CSL), Kochi.
- It is the largest warship ever to be built in India having a deep displacement of close to 45,000 tonnes and is also considered as the most ambitious naval vessel project of the country.

Designed by:

- Designed by Indian Navy's inhouse Directorate of Naval Design (DND) and built by CSL, a Public Sector Shipyard under Ministry of Shipping (MoS), the carrier is christened after its illustrious predecessor, India's first Aircraft Carrier which played a vital role in the 1971 war.

Salient Features:

- The 262 metre long carrier has a full displacement of close to 45,000 tonnes which is much larger and advanced than its predecessor.
- The ship is powered by four Gas Turbines totalling 88 MW power and has a maximum speed of 28 Knots.
- Vikrant has been built with high degree of automation for machinery operation, ship navigation and survivability, and has been designed to accommodate an assortment of fixed wing and rotary aircraft.
- The ship would be capable of operating air wing consisting of 30 aircraft comprising of MIG-29K fighter jets, Kamov-31, MH-60R multi-role helicopters, in addition to indigenously manufactured Advanced Light Helicopters (ALH) and Light Combat Aircraft (LCA) (Navy).
- Using a novel aircraft-operation mode known as STOBAR (Short Take- Off but Arrested Landing), the IAC is equipped with a ski- jump for launching aircraft, and a set of 'arrestor wires' for their recovery onboard.

Stakeholders:

- The ship has large number of indigenous equipment and machinery, involving major industrial houses in the country viz. BEL, BHEL, GRSE, Keltron, Kirloskar, Larsen & Toubro, Wartsila India etc. as well as over 100 MSMEs.
- The indigenisation efforts has also led to development of ancillary industries, besides generation of employment opportunities and bolstering plough back effect on economy, both locally as well as pan-India.

ENVIRONMENT

INDIA'S LARGEST FLOATING SOLAR POWER PROJECT COMMISSIONED

Why in news?

- India's largest floating Solar Power Project is now fully operational.
- NTPC declared Commercial Operation of the final part capacity of 20 MW out of 100 MW Ramagundam Floating Solar PV Project at Ramagundam, Telangana.

Total commercial operation of Floating Solar Capacity in Southern Region:

- With the operationalisation of 100-MW Solar PV Project at Ramagundam, total commercial operation of Floating Solar Capacity in Southern Region rose to 217 MW.
- Earlier, NTPC declared Commercial operation of 92 MW Floating Solar at Kayamkulam (Kerala) and 25 MW Floating Solar at Simhadri (Andhra Pradesh).

Salient features:

- The 100-MW Floating Solar project at Ramagundam is endowed with advanced technology as well as environment friendly features.
- Constructed with financial implication of Rs. 423 crores through M/s BHEL as EPC (Engineering, Procurement and Construction) contract, the project spreads over 500 acres of its reservoir.
- Divided into 40 blocks, each having 2.5 MW.
- Each block consists of one floating platform and an array of 11,200 solar modules.
- The floating platform consists of one Inverter, Transformer, and a HT breaker.

High Modulus Polyethylene:

- The solar modules are placed on floaters manufactured with HDPE (High Density Polyethylene) material.
- The entire floating system is being anchored through special HMPE (High Modulus Polyethylene) rope to the dead weights placed in the balancing reservoir bed. The power is being evacuated up to the existing switch yard through 33KV underground cables.
- This project is unique in the sense that all the electrical equipment including inverter, transformer, HT panel and SCADA (supervisory control and data acquisition) are also on floating ferro cement platforms.

Environment Friendly:

- The most obvious advantage is minimum land requirement mostly for associated evacuation arrangements.
- Further, with the presence of floating solar panels, the evaporation rate from water bodies is reduced, thus helping in water conservation. Approximately 32.5 lakh cubic meters per year water evaporation can be avoided.

- The water body underneath the solar modules helps in maintaining their ambient temperature, thereby improving their efficiency and generation.
- Similarly, while coal consumption of 1,65,000 Tons can be avoided per year; Co2 emission of 2,10,000 tons per year can be avoided.

EARTHQUAKES MEASUREMENT

Why in news?

- Recently a powerful earthquake of magnitude 5.9 on the Richter scale struck a remote town in Afghanistan, killing over a thousand and injuring many more.
- According to the U.S. Federal Emergency Management Agency, a 5.9 on the Richter scale is roughly equivalent to 37 times the energy released by the atomic bomb dropped on Hiroshima.
- Experts are still trying to figure out the best early warning system to mitigate the damage caused by earthquakes.

How do earthquakes happen?

- According to the theory of plate tectonics, the Earth's crust and upper mantle are made of large rigid plates that can move relative to one another. Slip on faults near the plate boundaries can result in earthquakes.
- The point inside the Earth where the earthquake rupture starts is called the focus or hypocentre. The point directly above it on the surface of the Earth is the epicentre.

What are seismic waves?

- Any elastic material when subjected to stress, stretches in a proportional way, until the elastic limit is reached. When the elastic limit is crossed, it breaks.
- Similarly, the Earth also has an elastic limit and when the stress is higher than this limit, it breaks. Then there is a generation of heat, and energy is released.
- Since the material is elastic, the energy is released in the form of elastic waves. These propagate to a distance determined by the extent of the impact. These are known as seismic waves.

How are earthquakes measured?

- Earthquakes are measured by seismographic networks, which are made of seismic stations, each of which measures the shaking of the ground beneath it. In India, the National Seismological Network does this work. Its sensors can now detect an earthquake within five to ten minutes.
- The wave parameters are measured, not the total energy released. There is a relationship between the quantum of energy released and the wave amplitude. The amplitude of the wave is a function of the time period of the wave.
- It is possible to convert the measured wave amplitude into the energy released for that earthquake. This is what seismologists call the magnitude of the earthquake.

What is the Richter magnitude scale?

- This is a measure of the magnitude of an earthquake and was first defined by Charles F. Richter of the California Institute of Technology, U.S., in 1935.
- The magnitude of an earthquake is the logarithm of the amplitude of the waves measured by the seismographs. Richter scale magnitudes are expressed as a whole number and a decimal part, for example 6.3 or 5.2.
- Since it is a logarithmic scale, an increase of the whole number by one unit signifies a tenfold increase in the amplitude of the wave and a 31-times increase of the energy released.

How are zones designated?

- Based on seismicity, intensity of earthquakes experienced, and geological and tectonic qualities of a region, countries are divided into several zones.
- In India, for example, there are four zones, designated Zone II-Zone V. Among these, Zone V is the most hazardous and Zone II the least hazardous.

Early warning systems for earthquakes:

- Since parameters of the earthquake are unknown, it is near impossible to predict an earthquake. The problem with earthquakes is that they are heavily dependent on the material property, which varies from place to place.
- The most successful early warning systems are in Japan. They have several hundreds of thousands recording devices. Responses are sent to a central point where they estimate whether it is large enough to form a tsunami or some other hazard, and precautionary steps are taken.

UN OCEAN CONFERENCE: 198 COUNTRIES ADOPT LISBON DECLARATION

Why in news?

- All 198 members of the United Nations unanimously adopted July 1, 2022 the Lisbon Declaration on ocean conservation.
- The nations, at the UN Ocean Conference 2022, committed to follow science-based and innovative actions on an urgent basis

Commitments:

- They also recognised that developing countries, particularly small island developing states and least developed countries, need assistance with capacity building.
- Participants at the conference also agreed to work on preventing, reducing and controlling marine pollution. It includes:
 - a) Nutrient pollution
 - b) Untreated wastewater
 - c) Solid waste discharges
 - d) Hazardous substances

- e) Emissions from the maritime sector, including shipping, shipwrecks
 - f) Anthropogenic underwater noise
- Other pledges include developing and promoting innovative financing solutions to help create sustainable ocean-based economies as well as expanding nature-based solutions to help conserve and preserve coastal communities.

Empowering women:

- Member nations have also committed to empowering women and girls, recognising their participation is crucial to building a sustainable ocean-based economy and achieving the UN-mandated Sustainable Development Goal 14.
- The representatives called upon all stakeholders to urgently take ambitious and concerted action to accelerate implementation to achieve Goal 14 as soon as possible.

What's next?

- The conference has set the stage for the fifth session of the intergovernmental conference on an international legally binding instrument for the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction.
- The fifth round of negotiations to implement the international treaty will be held in New York from August 15-26, 2022.
- It aims to protect biodiversity in Areas Beyond National Jurisdiction, which lie outside the 200-mile (322-kilometre) exclusive economic zones of countries.
- The participants expect to get the finance for solutions discussed in Lisbon at the 27th Conference of Parties (CoP 27) to the United Nations Framework Convention on Climate Change. It will be held in Egypt in November 2022.

NAIROBI FLIES & INFECTION IN SIKKIM

Why in news?

- Around 100 students of an engineering college in East Sikkim have reported skin infections after coming in contact with Nairobi flies.
- The population of Nairobi flies, a species of insect native to East Africa, is growing at a fast pace on campus of the Sikkim Manipal Institute of Technology (SMIT) in Majhitar.

What are Nairobi flies?

- Nairobi flies, also called Kenyan flies or dragon bugs, are small, beetle-like insects that belong to two species, *Paederuseximius* and *Paederussabaeus*.
- They are orange and black in colour, and thrive in areas with high rainfall, as has been witnessed in Sikkim in the past few weeks.
- Like most insects, the beetles are attracted by bright light.

How are humans affected by them?

- Usually, the insects attack pests that consume crops and are beneficial for humans but at times, they come in contact with humans directly and cause harm. These flies do not bite, but if disturbed while sitting on anyone's skin, they release a potent acidic substance that causes burns.
- This substance is called pederin, and can cause irritation if it comes in contact with the skin, leading to lesions or unusual marks or colouring on the skin.
- The skin begins to heal in a week or two, but some secondary infections can occur, especially if the victim scratches the irritated skin.

Have there been outbreaks of the disease?

- Major outbreaks have happened in Kenya and other parts of eastern Africa. In 1998, unusually heavy rain caused a large number of insects to come into the region, reported the Associated Press.
- Outside Africa, outbreaks have happened in India, Japan, Israel, and Paraguay in the past.

What is the way to protect oneself against Nairobi flies?

- Sleeping under mosquito nets can help. If a fly lands on a person, it should be gently brushed off, and should not be disturbed or touched to reduce the chances of it releasing pederin.
- The area where the flies sit should be washed with soap and water.
- If they are squelched and end up leaving toxic fluids on the skin, care should be taken that unwashed hands do not touch any other part of the body, particularly the eyes.

INDIA'S FIRST COMMERCIAL-SCALE GREEN AMMONIA AND GREEN METHANOL PROJECT

Why in news?

- Recently, NTPC RE Limited (NTPC REL) has signed a MoU with Gujarat Alkalies and Chemicals Limited (GACL).
- It seeks to realize green energy and green hydrogen objectives and the Government of India's efforts toward the carbon-neutrality economy.

Collaboration:

- The MoU envisages collaborating in the field of Renewable Energy, Green Methanol & Green Ammonia and mutually exploring the opportunities for the supply of 100 MW RE-RTC (Round The Clock) power and synthesizing 75 TPD Green Methanol and 35 TPD Green Ammonia for captive use for the production of various chemicals by GACL at its Vadodara and Dahej complex in Gujarat.

Background:

- This development comes in the backdrop of NTPC announcing its green hydrogen initiatives and

plans to build the country's first pilot projects for synthesizing green methanol, setting up green hydrogen filling stations, green hydrogen blending into PNG, and green energy storage project.

- This would be the first commercial-scale Green ammonia and Green methanol project in the country and would align with the vision laid out by the Prime Minister for Atmanirbhar Bharat.

"NTPC Renewable Energy Limited" (NTPC REL):

- NTPC REL, a 100 % subsidiary of NTPC, for taking care of the RE business of NTPC.
- NTPC is India's largest Power Utility and its core business is power generation with a total installed capacity of 69 GW (including JVs and subsidiaries).
- As part of increasing its renewable energy portfolio, a fully owned subsidiary has been formed on 7th October 2020 known as "NTPC Renewable Energy Limited" (NTPC REL) which shall take up Renewable Energy Parks and Projects including business in the area of Green Hydrogen, Energy Storage Technologies and Round the Clock RE Power.

MONSOON GETTING HOTTER THAN SUMMER: STUDY

Why in news?

- The monsoon has usually meant respite from the heat, but temperatures during June to September are seeing a rise, says an analysis by the Centre for Science and Environment (CSE).
- At an all-India level, average temperatures during the season are 0.3 degrees Celsius higher than the average summer temperatures (March to May) when compared from 1951 to 1980. In the past decade, 2012-2021, this anomaly has risen to 0.4 degrees Celsius.

Rising temperature even post monsoon:

- India's average temperature has risen 0.62 degrees Celsius from 1901 to 1920.
- However, in a breakdown of this rise, the CSE analysis shows it has translated to summer temperatures rising slower than not only monsoon but even post-monsoon (October-December) and winter (January and February) temperatures.
- The increase in these two seasons are 0.79 degrees and 0.58 degrees, respectively, whereas summer temperatures has risen only 0.49 degrees. This year, India saw record pre-monsoon temperatures in northern and western regions, in the absence of rain.

North-Western States:

- The average daily maximum temperature for March and April for Chandigarh, Delhi, Haryana, Himachal Pradesh, Jammu & Kashmir, Ladakh, Punjab, Rajasthan, Uttar Pradesh and Uttarakhand as per IMD classification was almost 4 degrees Celsius above normal (compared to its baseline of 1981-2010).

⇒ This is almost twice as much as the anomaly observed at an all-India level, and it holds true for even average daily minimum, daily mean and land surface temperatures. Temperatures became closer to normal during May.

Conditions in other parts of India:

- ⇒ The average daily maximum for north-western States for March was 30.7 degrees Celsius, whereas the all-India average was 33.1 degrees Celsius, or 2.4 degrees Celsius hotter. The average daily minimum temperature showed an even larger (4.9 degrees Celsius) difference.
- ⇒ Central India (Chhattisgarh, Dadra & Nagar Haveli, Daman & Diu, Goa, Gujarat, Madhya Pradesh, Maharashtra and Odisha) and the southern peninsular region (Andaman & Nicobar, Andhra Pradesh, Karnataka, Kerala, Lakshadweep, Puducherry, Tamil Nadu and Telangana) had higher normal temperatures than in the northwest during the pre-monsoon or summer season.
- ⇒ Central India's normal maximum was 2-7 degrees Celsius higher, while south peninsular India's normal minimum was 4-10 degrees Celsius higher than temperatures in northwest India.

Deaths due to heat waves:

- ⇒ These numbers had a bearing on heatwave deaths. From 2015 to 2020, 2,137 people had reportedly died of heat stroke in the States in northwest but the southern peninsula region had reported 2,444 deaths due to excess environmental heat, with Andhra Pradesh alone accounting for over half the reported casualties.
- ⇒ Delhi reported only one death for the period.
- ⇒ Most deaths have been reported among working age men (30-60 age group).

Effect of heat wave:

- ⇒ The years, 2016 and 2017 reported twice the number of hazardous heat wave events compared to 2015, but reported deaths caused were less than a quarter of the 2015 toll. The urban heat island effect contributed to heat stress.
- ⇒ In terms of absolute air temperature, Hyderabad, with a 7.1 degrees Celsius variation, had the most pronounced heat islands, while Kolkata, had just 1.3 degrees Celsius.

DARJEELING ZOO ATTEMPTS INDIA'S FIRST AUGMENTATION OF RED PANDAS IN WILD

Why in news?

- ⇒ The Singalila National Park, the highest protected area in West Bengal, has started an ambitious programme to augment the wild red panda population.

What is the programme all about?

- ⇒ In the first re-wilding programme of red pandas (*Ailurusfulgens*) in India, the Padmaja Naidu

Himalayan Zoological Park has started an ambitious programme to release 20 of these furry mammals in about five years to the forests.

- ⇒ The Padmaja Naidu Park, at a height of about 2,000 metres above the sea level, is one of the high-altitude zoos in the country and has been quite successful in captive breeding of the furry mammals.
- ⇒ Conservation breeding of red pandas is only one part of the programme. Selection of animals to be released in the wild, breaking their food association with humans and tagging the animals released in the wild are crucial factors in re-wilding of the red panda population.

Declining red pandas in wild:

- ⇒ The number of red pandas has been declining in the wild, even in the Singalila and Neora Valley National Parks, the two protected areas where the endangered mammal is found in the wild in West Bengal.
- ⇒ Recent studies estimate that there are 38 of them in Singalila and 32 in Neora.

About Red Panda:

- ⇒ Categorised as an endangered species as per IUCN Red List of Threatened Species, red pandas are shy, solitary and arboreal animals and considered an indicator species for ecological change.
- ⇒ They are also one of the most iconic species in terms of their importance to global conservation.

Habitat:

- ⇒ A couple of recent publications by Zoological Survey of India (ZSI) have resolved the mystery around the demography and speciation in red panda.
- ⇒ The studies have concluded that India is home to both the (sub) species – Himalayan red panda (*Ailurusfulgens*) and the Chinese red panda (*Ailurusstyani*) and the Siang river in Arunachal Pradesh splits the two phylogenetic species.

VILLAGERS' STIR AGAINST SOLAR PLANTS PROTECTS KHEJRI TREES

Why in news?

- ⇒ The proposed installation of eight solar power plants in Jodhpur district's Phalodi tehsil has led to a major confrontation with the Bishnoi activists, who have strongly protested against the felling of khejri trees.
- ⇒ The solar energy companies, which have acquired 25,000-bigha land on lease in the region, have cut down a large number of khejri trees, which is the State tree of Rajasthan.

Desert Ecosystem:

- ⇒ Though the expansion of solar and wind power projects on the vast desert land in western Rajasthan is set to bring the State to the forefront of power generation, the process of their installation has adversely affected the desert ecosystem.

- The trees need to be felled to let the solar panels be aligned horizontally for a certain length of space.
- The two new entrants in the power sector have provided economic gains to the agriculturists whose land was taken over to install the plants with the payment of cash compensation.

Bishnoi activists:

- The Bishnoi activists, who have a sentimental attachment with khejri or Prosopis cineraria trees, claim that the solar panels are causing incredible loss to Thar desert's flora and fauna.
- Thousands of khejri trees have been chopped off wherever the new solar power plants have been set up.

Significance of Khejri tree:

- Khejri tree plays an important role in maintaining the ecosystem of Thar region because of its ability to survive in dry weather.
- The tree is used in different ways, such as a source of fodder and firewood, and it helps in sustaining the soil's nutrient value and ensuring a good yield of desert crops and food plants.
- Its fruit is used to make the popular dish 'Sangri'.

POLITICAL AND MARKET ECONOMICS DETERMINE GLOBAL BIODIVERSITY CRISIS: IPBES9 REPORT

Why in news?

- The recent 'Diverse Values and Valuation of Nature' report suggests blending values of nature and economic benefits through policy making.
- Political and economic decisions drive the global biodiversity crisis and there is a crucial opportunity to address the issue, according to a new report released by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES9).

Details:

- The report offered a detailed typology of nature's values, highlighting how different perspectives of world representatives and knowledge systems affected the ways in which people interacted with nature and valued it.

Key Highlights:

- The report stated that the economic and political decisions made by national governments mainly prioritised values of nature, especially with respect to market demand, often associated with food produced intensively.
- Moreover, the policies associated with these market values did not effectively highlight how the changes in nature affected the quality of life for humans.
- Also, the policymaking exercise did not consider many non-commercial activities associated with the role of nature in peoples' lives like climate regulation and cultural identity.

- The Values Assessment provides decision makers with concrete tools and methods to better understand the values that individuals and communities hold about nature.

Leverage points:

- They have identified 'leverage points' that can help create the conditions for necessary transformations required for a better sustainable future. These are:
 - a) Recognising the diverse values of nature
 - b) Embedding valuation into decision-making
 - c) Reforming policies and regulations to internalise nature's values
 - d) Shifting underlying societal norms and goals to align with global sustainability and justice objectives

Way Forward:

- The report paid specific attention to future pathways related to 'green economy', 'degrowth', 'Earth stewardship' and 'nature protection'. Although each pathway is underpinned by different values, they share principles aligned with sustainability.
- The understanding of values will provide a strong basis for designing better economic policies and national planning by countries for sustainable development.

CAQM FORMULATES COMPREHENSIVE POLICY TO ABATE AIR POLLUTION IN DELHI-NCR

Why in news?

- The Commission for Air Quality Management in NCR & Adjoining Areas (CAQM) has formulated a Comprehensive Policy to abate the menace of air pollution in Delhi-NCR through differentiated geographical approach and timelines of action.

Scope:

- This policy contains sector-wise recommendations for Agencies and Departments of Central Government, NCR State Governments and GNCTD along with Central Pollution Control Board (CPCB) and State Pollution Control Boards (PCBs) of NCR to prevent, control and abate air pollution in the NCR including industries, vehicles/ transport, construction and demolition (C&D), dust from roads and open areas, municipal solid waste burning, crop residue burning etc.
- The policy framed by CAQM also deals with thermal power plants (TPPs), clean fuels & electric mobility, public transportation, road traffic management, diesel generators (DGs), bursting of fire crackers and abating air pollution through greening and plantation.
- The scope of this comprehensive plan by CAQM is to abate air pollution primarily in Delhi and NCR. Owing to a deficit in infrastructure and systems across sub-regions of the NCR, wide variations in baseline actions, and varying levels of urbanization,

a differentiated approach and timelines have been suggested for various sub-regions.

These sub-regions include:

- The National Capital Territory (NCT) of Delhi
- The NCR districts near Delhi – Gurugram, Faridabad, Sonapat, Jhajjar, Rohtak, Ghaziabad, Gautam Buddha Nagar and Baghpat
- Other NCR districts
- The entire state of Punjab and the non-NCR districts of Haryana, primarily for addressing episodic events of stubble burning.

Timeframe:

- The Expert Group, considering the issues and complexities involved, has suggested short-term (up to one year), medium term (one-three years), and long term (three-five years, preferably) actions.
- This timeframe is further differentiated for different sub-regions/areas/districts/cities to provide the space for all to transform to meet the common air quality goal.
- Broadly, the critical areas of transformation aimed for meeting the national ambient air quality standards include:
 - Widespread access to affordable clean fuels and technology in industry, transport and households
 - Mobility transition including through mass transit, electrification of vehicles, building walking and cycling infrastructure and reducing personal vehicle usage etc
 - Circular economy for material recovery from waste to prevent its dumping and burning
 - Dust management from C&D activities, roads/Right of Ways (RoW) and open areas with appropriate technology, infrastructure and greening measures
 - Strict time-bound implementation, improved monitoring and compliance.

Background:

- The Supreme Court of India in WP (Civil) No 1135 of 2020 in the matter of Aditya Dubey (minor) and Anr v/s UOI & Ors. had directed CAQM that with a view to “find permanent solution to the air pollution menace occurring every year in Delhi and NCR, suggestions may be invited from the general public as well as the experts in the field”.
- Further, pursuant to the directions of Supreme Court, the Commission constituted an Expert Group.

INDIA SET TO BE HOME OF CHEETAHS AFTER 70 YEARS

Why in news?

- A wildlife sanctuary in Madhya Pradesh is getting ready for African cheetahs, which are being brought under an intercontinental translocation project in August 2022.

Details:

- Cheetahs will be introduced in the Kuno-Palpur National Park (KNP) in Sheopur district.
- KNP has made preparations for housing 12 to 15 cheetahs, including females, and has earmarked an area of five square kilometre having eight compartments in it for initially keeping the translocated animals.

Why KNP?

- KNP is spread across an area of over 750 sq km and is capable of handling the carnivores as it has maintained a large prey base of cheetal, sambhar, blue bull, wild boar and langoor among others.
- The Kuno National Park, located in the Chambal region, has the right environmental conditions for hosting cheetahs.
- Earlier, the wildlife sanctuary was shortlisted as a second home for the famous Asiatic lions of Gujarat, but the programme ran into trouble after the government of the neighbouring state opposed shifting of the big cats from the Gir forest.

Background:

- The country's last spotted cheetah died in Chhattisgarh in undivided Madhya Pradesh in 1947 and the wild animal was declared extinct in the country in 1952.
- The Wildlife Institute of India (WII) some years back prepared a cheetah reintroduction project.

SCIENTISTS ON THE CURIOUS CASE OF HIMALAYAN GLACIERS RESISTING GLOBAL WARMING

Why in news?

- Researchers have taken a significant leap toward solving the mystery of why few pockets of glaciers in the Karakoram Range are resisting glacial melt due to global warming, defying the trend of glaciers losing mass across the globe, with the Himalayas being no exception.
- They have attributed this phenomenon called ‘Karakoram Anomaly’ to recent revival of western disturbances (WDs).

Significance of Himalayan glaciers:

- Himalayan glaciers are of paramount importance in the Indian context, especially for the millions of dwellers living downstream who rely on these perennial rivers for their day-to-day water needs.
- They are fast receding under the impacts of global warming, and stifling stress on the water resources is inevitable in the coming decades.

Glaciers of Karakoram Range:

- In contrast, the glaciers of central Karakoram have surprisingly remained unchanged or slightly increased in the last few decades. This phenomenon

has been puzzling glaciologists and providing climate deniers with a very rare straw to clutch at.

- Researchers found this peculiar because the behaviour seems to be confined to a very small region, with only Kunlun ranges being another example of showing similar trends in the whole of Himalaya.
- A recent study has postulated a new theory to explain this defiance of the impacts of global warming in certain pockets as opposed to other glaciers of the region.

Revival of western disturbance:

- It claimed that the recent revival of western disturbance has been instrumental in triggering and sustaining the Karakoram Anomaly since the advent of the 21st century.
- It is for the first time that a study brought forth the importance that enhanced WD-precipitation input during the accumulation period plays in modulating regional climatic anomaly.
- WDs are the primary feeder of snowfall for the region during winters. The study suggests they constitute about around 65% of the total seasonal snowfall volume and about 53% of the total seasonal precipitation, easily making them the most important source of moisture.
- The precipitation intensity of WDs impacting Karakoram has increased by around 10% in last two decades, which only enhances their role in sustaining the regional anomaly.

Role of snowfall:

- The group applied a tracking algorithm to three separate global reanalysis datasets to track and compile a comprehensive catalog of WDs impinging the Karakoram-Himalayan region in the last four decades.
- The analysis for the tracks passing through the Karakoram reveals the role of snowfall as a crucial factor in mass balance estimations.
- Calculations by the scientists reveal that contribution of WDs in terms of snowfall volume over the core glacier regions of Karakoram have increased by about 27% in recent decades, while precipitation received from non-WD sources have significantly decreased by around 17%, further strengthening their claims.

Way Forward:

- While previous studies have highlighted the role of temperature in establishing and sustaining the anomaly over the years, it is for the first time that the impact of precipitation in feeding the anomaly has been highlighted.
- The researchers have also quantified the impact of precipitation in feeding the anomaly.
- The anomaly provides a very bleak but nonetheless a ray of hope towards delaying the inevitable. After recognising the importance of WDs in controlling

the anomaly, their future behaviour might very well decide the fate of Himalayan glaciers as well.

ENDANGERED GREEN SEA TURTLES

Why in news?

- Recently, at least 30 to 50 green sea turtles were found dead or almost dying near Kumejima, a remote Japanese island in southern Okinawa prefecture.
- The turtles had stab wounds on their necks that were supposedly caused by a blade.

Who is responsible for the deaths?

- The green sea turtles are inhabitants of the kelp forests in Kumejima—located in one of the tiny islands that lies about 2,000km south of Japanese mainland.
- The area where they were found is covered with seagrass, which the turtles consume.
- A frustrated fisherman has confessed that he stabbed the sea turtles to death after they were entangled in his fishing nets.

What are green sea turtles?

- What sets green sea turtles apart from the rest of the turtles are their top shells and the fact that they have a single pair of prefrontal scales rather than two pairs that are normally found in other sea turtles.
- The shell covers most of the reptile's body except for its flippers and head. Despite the name, a green sea turtle's shell is not always green.
- They are commonly found in subtropical and tropical oceans across the world. Their populations have been found in the Atlantic, Indian and Pacific Oceans.

Why are they endangered?

- All species of turtles are considered endangered and are on the list of International Union for Conservation of Nature's (IUCN) red list.
- According to World Wide Fund for Nature, they are protected and conserved worldwide.
- Green sea turtle population has witnessed a 90 per cent decrease over the past half century.
- Climate change, habitat loss, diseases like fibropapilloma and pollution near beaches have been attributed as a threat to these turtles.
- They are also listed as an endangered species by the Japanese authorities.

BARAK BHUBAN WILDLIFE SANCTUARY

Why in news?

- Assam's Barak Valley will soon get a second wildlife sanctuary with Governor approving a proposal for the creation of Barak Bhuban Wildlife Sanctuary.
- The Barak Valley also houses the Borail Wildlife Sanctuary.

Barak Bhuban Wildlife Sanctuary:

- The Barak Bhuban Wildlife Sanctuary will be spread over an area of 320 sq km between the Barak river and the Sonai river.

- The area has eight recorded species of primates; slow loris, rhesus macaque, pig-tailed macaque, stump-tailed macaque, Assamese macaque, capped langur, phayre's leaf monkey and hoolock gibbon.
- It's also an important habitat for king cobra.

Barak Valley:

- Named after the second-largest river in the northeast, the Barak Valley is home to 550 species of birds and 100 species of mammals.
- It comprises three districts -- Cachar, Hailakandi and Karimganj.

Way Forward:

- A Shiva temple is located near the site where the Bhuban Wildlife Sanctuary is proposed to be created and these two together can help draw tourists and create employment opportunities in the Barak Valley.

HEAT WAVES IN THE UNITED STATES

Why in news?

- Virtually all the contiguous United States experienced above normal temperatures recently, with more dangerously hot weather forecast
- The US heat wave followed record heat that killed hundreds if not thousands of people and sparked wildfires in Europe.

What is a heat wave?

- A heat wave has no single scientific definition. Depending on the climate of a region, it can be determined by a certain number of days above a specific temperature or percentile of the norm.

Arctic warming and jet stream migration:

- The Arctic is warming three to four times faster than the globe as a whole, meaning there is ever less difference between northern temperatures and those closer to the equator.
- That is resulting in swings in the North Atlantic jet stream, which in turn leads to extreme weather events like heat waves and floods.

Heat domes:

- Warmer oceans contribute to heat domes, which trap heat over large geographical areas.
- Scientists have found the main cause of heat domes is a strong change in ocean temperatures from west to east in the tropical Pacific Ocean during the preceding winter
- As prevailing winds move the hot air east, the northern shifts of the jet stream trap the air and move it toward land, where it sinks, resulting in heat waves.

El Nino & La Nina:

- Every few years, the climate patterns known as El Niño and, less frequently, La Niña occur.
- El Niño brings warm water from the equatorial Pacific Ocean up to the western coast of North America, and La Niña brings colder water

- At present, La Niña is in effect. Because summer temperatures trend lower during La Niña, climate scientists are concerned about what a serious heat wave would look like during the next El Niño, when even hotter summer weather could be expected.

Human-influenced climate change:

- Climate change caused by the burning of fossil fuels is a global phenomenon that is certainly playing a role in what the United States is experiencing.
- Climate change is making extreme and unprecedented heat events both more intense and more common, pretty much universally throughout the world.

FIVE MORE INDIAN WETLANDS GET RAMSAR RECOGNITION

Why in news?

- Recently, five more Indian sites have been recognised as wetlands of international importance under the Ramsar Convention.
- Three of these wetlands are in Tamil Nadu and one each in Mizoram and Madhya Pradesh, making a total of 54 Ramsar sites in the country.
- The sites include the Karikili Bird Sanctuary, Pallikaranai Marsh Reserve Forest & Pichavaram Mangrove in Tamil Nadu, Pala wetland in Mizoram, and Sakhya Sagar in Madhya Pradesh.

Which sites have been given Ramsar recognition?

- The five newly recognised wetlands of international importance include:

Karikili Bird Sanctuary:

- Located in Kanchipuram district, nearly 86 kilometers away from Chennai, this bird sanctuary is spread over a five-kilometer-wide belt and is home to cormorants, egrets, grey heron, open-billed stork, darter, spoonbill, white ibis, night herons, grebes, grey pelican among others.
- It hosts more than 100 bird species.

Pallikaranai Marsh Reserve Forest:

- One of the last remaining natural wetlands of Chennai city, the marsh drains in an area of 250 square kilometers encompassing 65 wetlands.
- According to the Tamil Nadu State Wetland Authority, the Pallikaranai Marsh is one of the few natural coastal aquatic habitats that qualify as a wetland in India.

Pichavaram Mangrove:

- The Pallikaranai wetland is a freshwater marsh in Chennai and is located adjacent to the Bay of Bengal. It is said to be the city's only surviving wetland ecosystem.
- Separated from the sea by a sand bar, Pichavaram one of the largest Mangrove forests in India.
- It is also home to nearly 180 species.

Sakhya Sagar:

⇒ Created from the Manier River in 1918, SakhyaSagar is located near Madhav National Park in the Shivpuri district of Madhya Pradesh.

Pala wetland:

- ⇒ PalakDil or Pala Tipo means swallowing lake in Mara language, and the wetland, located near Phura village in Saiha district of Mizoram, is home to a wide range of animals, birds, and reptiles.
- ⇒ Its geographical location falls under the Indo-Burma biodiversity hotspot and is therefore rich in animal and plant species.
- ⇒ The lake is a major component of the Palak Wildlife Sanctuary and it supports the major biodiversity of the sanctuary.

What is Ramsar recognition?

- ⇒ The Ramsar recognition aims to develop and maintain an international network of wetlands that are important for the conservation of global biological diversity and for sustaining human life through the maintenance of their ecosystem components, processes, and benefits.
- ⇒ The recognition is part of the Ramsar Convention, an international treaty for the conservation and wise use of wetlands.
- ⇒ It is named after the Iranian city of Ramsar, on the Caspian Sea, where the treaty was signed on February 2, 1971.

LITHOSPHERIC DRIPPING UNDER THE ANDES

Context:

- ⇒ Scientists have for the first time discovered a unique development happening under the Andes, the longest continental mountain range in the world, the crust beneath is dripping like honey and it has been happening for millions of years.
- ⇒ The material is being consumed by the mantle, the layer beneath the crust.

Layers of Earth's surface:

- ⇒ Earth's surface has three layers, the outermost being the crust, the middle is the mantle and the innermost region is called the core.

What is lithospheric dripping?

- ⇒ Researchers found that the rocky outermost layer of Earth's shell is continuously sinking into the more fluid layer of the planet's mantle in a process called lithospheric dripping.
- ⇒ This is resulting in significant deformations on the surface leading to the creation of basins, folding of the crust and irregular elevations.

Findings:

- ⇒ The study states that the basin and plateau regions of the Central Andes have undergone phases of rapid subsidence and uplift during the last 20million years in addition to internal tectonic deformation.

- ⇒ The formation of the Arizaro Basin and nearby Central Andean basins are caused by symptomatic lithospheric dripping events and highlight the significant role of non-subduction geodynamic mechanisms in driving surface tectonics.

Similar phenomenon in other parts of the world:

- ⇒ While the findings are new to the world of plate tectonics, lithospheric dripping has been noticed around the world including in the Central Anatolian Plateau in Turkey and the Great Basin in the western US.
- ⇒ Researchers have confirmed that several regions in the central Andes Mountains in South America were formed the same way.

Phenomenon behind lithospheric dripping:

- ⇒ Scientists believe that the phenomenon happens when portions of the lowest layer of Earth's outer shell thicken and begin to drip into the mantle below when warmed to a certain temperature.
- ⇒ As it sinks it first forms a basin at the surface which later springs up when the weight below breaks off and sinks further into the deeper depths of the mantle.

Conclusion:

- ⇒ They developed models to recreate the conditions and situations to understand what happened thousands of centuries ago that led to the modern-day mountains in the region. The researchers suggest the findings aim to clarify the link between mantle processes and crustal tectonics.
- ⇒ The discoveries show that the lithosphere can be more volatile or fluid-like than believed.

SOCIAL ISSUES

GUIDELINES FOR MISSION VATSALYA SCHEME

Why in news?

- ⇒ Recently, the Ministry of Women and Child Development issues guidelines for Mission Vatsalya Scheme.

About:

- ⇒ The Ministry of Women and Child Development is implementing a Centrally Sponsored Scheme "Mission Vatsalya" erstwhile Child Protection Services (CPS) Scheme, since 2009-10 for the welfare and rehabilitation of children.

Objective:

The objective of Mission Vatsalya is to

- a) secure a healthy and happy childhood for each and every child in India,
- b) ensure opportunities to enable them to discover their full potential and assist them in flourishing in all respects, in a sustained manner,
- c) foster a sensitive, supportive and synchronized ecosystem for development of children,

- d) assist States/UTs in delivering the mandate of the Juvenile Justice Act 2015 and
- e) achieve the SDG goals.
- ⇒ Mission Vatsalya promotes family-based non-institutional care of children in difficult circumstances based on the principle of institutionalization of children as a measure of last resort.

Components under Mission Vatsalya include

- ⇒ Improve functioning of statutory bodies;
- ⇒ Strengthen service delivery structures;
- ⇒ Upscale institutional care/services;
- ⇒ Encourage non-institutional community-based care;
- ⇒ emergency outreach services;
- ⇒ Training and capacity building.

Implementation:

- ⇒ All the States/UTs have signed the Memorandum of Undertaking (MoU) with the Ministry for implementation of the Scheme. Mission Vatsalya will be implemented as a centrally sponsored scheme as per prescribed cost sharing ratio between the Centre and State/UT Governments.
- ⇒ The ministry has issued detailed guidelines of the Mission Vatsalya Scheme and State Governments/UT Administrations have been asked to prepare their financial proposal and plans for the year 2022-23 under Mission Vatsalya Scheme on the basis of financial norms of Guidelines.
- ⇒ The norms of Mission Vatsalya scheme will be applicable from 01 April, 2022.

SCIENCE AND TECHNOLOGY

PSLV-C53 MISSION

Why in news?

- ⇒ Recently, the Indian Space Research Organisation (ISRO) launched three satellites for Singapore from its Satish Dhawan Space Centre, Sriharikota.
- ⇒ The PSLV-C53 mission deployed the three satellites in Low Earth Orbit (LEO).

Three satellites:

- ⇒ The spacecraft carried DS-EO satellite, NeuSAR, a 155 kg satellite, and Scoob-1 of Nanyang Technological University (NTU), Singapore.
- ⇒ The DS-EO satellite carried an Electro-Optic, multi-spectral payload with 0.5 m resolution imaging capability.
- ⇒ The SCOOB-I is the first satellite in the Student Satellite Series (S3-I), a hands-on student training program from the Satellite Research Centre (SaRC) at Singapore's NTU School of Electrical and Electronic Engineering.

Two small satellites:

- ⇒ The mission also placed two small satellites, a student satellite INSPIRESat-1, and a technology

demonstrator satellite, INS-2TD, a precursor to India-Bhutan Joint Satellite INS-2B.

PSLV Orbital Experimental Module (POEM):

- ⇒ ISRO is attempting a new experiment with the four-stage rocket and use the fourth stage (PS4) to perform PSLV Orbital Experimental Module (POEM) activity.
- ⇒ Under this, the team will perform in-orbit scientific experiments using the spent PS4 stage as an orbital platform.
- ⇒ POEM carries six payloads, including two from Indian Space Start-ups M/s Digantara and M/s Dhruva Aerospace, enabled through IN-SPACE and NSIL.

PSLV:

- ⇒ The PSLV is ISRO's workhorse and has been its most successful launch vehicle developed indigenously.
- ⇒ It has been launched 54 times in the past and was also responsible for launching India's highly successful Chandrayaan-1 mission in 2008 and the Mars Orbiter Spacecraft in 2013 that later traveled to Mars.
- ⇒ The launch vehicle is capable of taking up to 1,750 kg of payload to Sun-Synchronous Polar Orbits of 600 km altitude.
- ⇒ It has also been used to launch various satellites into Geosynchronous and Geostationary orbits, like satellites from the IRNSS constellation.
- ⇒ PSLV is 44 meters in length and has a diameter of 2.8 meters with a lift off mass of 320 tons. The second launch pad has so far conducted 29 other launches.

Second mission of 2022:

- ⇒ This was the second PSLV mission of the year after ISRO successfully launched the PSLV-C52 mission in February 2022 by injecting the Earth Observation Satellite (EOS-04), into an intended sun-synchronous polar orbit of 529 km altitude.

CURIOSITY STUDIES INGREDIENTS OF LIFE FROM 3.5-BILLION-YEAR-OLD ROCK ON MARS

Context:

- ⇒ One of the biggest aims of several missions currently active on Mars is to identify the first signs of life. NASA's Perseverance, Curiosity, and China's Zhurong rover are delivering key science updates from the Red Planet, which is set to be humanity's first planetary destination outside Earth.
- ⇒ In this regard, the Curiosity rover has taken a stock of the organic makeup of the region in which it has been trundling for the last few years.

Organic carbon:

- ⇒ Scientists have measured the total organic carbon a key component in the molecules of life in Martian rocks for the first time by analysing the data from the curiosity rover.
- ⇒ Organic carbon is carbon bound to a hydrogen atom. It is the basis for organic molecules, which are created and used by all known forms of life.

Yellowknife Bay:

- The rover drilled samples from 3.5-billion-year-old mudstone rocks in the Yellowknife Bay formation of Gale crater, the site of an ancient lake on Mars.
- Scientists have found at least 200 to 273 parts per million of organic carbon. This is comparable to or even more than the amount found in rocks in very low-life places on Earth, such as parts of the Atacama Desert in South America, and more than has been detected in Mars meteorites.

How samples were collected?

- These samples were delivered to its Sample Analysis at Mars (SAM) instrument, where an oven heated the powdered rock to progressively higher temperatures.
- The rover used oxygen and heat to convert the organic carbon to carbon dioxide (CO₂), the amount of which is measured to get the amount of organic carbon in the rocks. Adding oxygen and heat allows the carbon molecules to break apart and react carbon with oxygen to make CO₂.
- NASA said that some carbon is locked up in minerals, so the oven heats the sample to very high temperatures to decompose those minerals and release the carbon to convert it to CO₂.
- While the experiment was performed in 2014 it took years of analysis to understand the data and put the results in the context of the mission's other discoveries at Gale Crater.

Gale Crater:

- The gale crater, apart from being the site of an ancient lake also has organic carbon that was part of this material and got incorporated into the mudstone.
- Besides liquid water and organic carbon, Gale crater had other conditions conducive to life, such as chemical energy sources, low acidity, and other elements essential for biology, such as oxygen, nitrogen, and sulfur.

DRDO FLIGHT TESTS NEW AUTONOMOUS FLYING WING TECHNOLOGY DEMONSTRATOR

Why in news?

- The Defence Research and Development Organisation (DRDO) successfully carried out the maiden test flight of a new Unmanned Aerial Vehicle (UAV), an autonomous Flying Wing Technology Demonstrator, from the Aeronautical Test Range, Chitradurga, Karnataka.

Salient features:

- The Unmanned Aerial Vehicle (UAV) is powered by a small turboprop engine.
- The airframe, undercarriage and entire flight control and avionics systems used for the aircraft were developed indigenously, DRDO said.
- The engine is Russian TRDD-50MT originally designed for cruise missiles.

Stakeholder:

- The UAV was designed and developed by Aeronautical Development Establishment (ADE), Bengaluru, a premier research laboratory of DRDO.

What's next?

- DRDO is in the process of developing UAVs of different classes to meet the requirements of the armed forces.
- Rustom-2, the indigenous Medium Altitude Long Endurance (MALE) UAV under development, had crossed a milestone by reaching an altitude of 25,000 feet and an endurance of 10 hours in December 2021 and is being designed to reach an altitude of 30,000 feet and 18 hours endurance.
- An Unmanned Combat Aerial Vehicle is also on the drawing board.

ASTRONAUT STUDY REVEALS EFFECTS OF SPACE TRAVEL ON HUMAN BONES

Why in news?

- A recent study of bone loss in 17 astronauts who flew aboard the International Space Station is providing a fuller understanding of the effects of space travel on the human body and steps that can mitigate it, crucial knowledge ahead of potential ambitious future missions.

Source:

- The research amassed new data on bone loss in astronauts caused by the microgravity conditions of space and the degree to which bone mineral density can be regained on Earth.
- It involved 14 male and three female astronauts, average age 47, whose missions ranged from four to seven months in space, with an average of about 5-1/2 months.

Key observations:

- A year after returning to Earth, the astronauts on average exhibited 2.1% reduced bone mineral density at the tibia and 1.3% reduced bone strength. Nine did not recover bone mineral density after the space flight, experiencing permanent loss.
- The bone loss occurs because bones that typically would be weight-bearing on Earth do not carry weight in space.
- During spaceflight, fine bone structures thin, and eventually some of the bone rods disconnect from one another. Once the astronaut comes back to Earth, the remaining bone connections can thicken and strengthen, but the ones that disconnected in space can't be rebuilt, so the astronaut's overall bone structure permanently changes.
- The study showed that longer space missions resulted both in more bone loss and a lower likelihood of recovering bone afterward.

Other microgravity affects to human body:

- The cardiovascular system also experiences many changes. Without gravity pulling blood towards feet,

astronauts experience a fluid shift that causes more blood to pool in the upper body. This can affect the cardiovascular system and vision.

- Radiation is also a large health concern for astronauts as the further they travel from Earth the greater exposure to the sun's radiation and increased cancer risk.

Way Forward:

- Space travel poses various challenges to the human body key concerns for space agencies as they plan new explorations.
- In-flight exercise, resistance training on the space station proved important for preventing muscle and bone loss.
- For instance, NASA is aiming to send astronauts back to the moon, a mission now planned for 2025 at the earliest. That could be a prelude to future astronaut missions to Mars or a longer-term presence on the lunar surface.

ONE-FOURTH OF SEAFLOOR EQUAL TO EUROPE MAPPED FOR THE FIRST TIME

Why in news?

- Recently, researchers have successfully mapped nearly one-fourth of the global seabed amassing information and data in large chunks to create a digital map of the ocean floor.

Details:

- The development was revealed at the recently concluded UN Ocean Conference 2022, where researchers from the Seabed 2030 Project said that the figure now stands at 23.4 per cent, reflecting an increase of 10.1 million square kilometers of new bathymetric data.
- The amount of sea floor that has been mapped now equates to an area around the size of Europe, and slightly larger than the Sahara Desert.

What is Seabed 2030?

- A collaborative project between The Nippon Foundation and the General Bathymetric Chart of the Oceans (GEBCO), Seabed 2030 aims to chart the world's entire ocean floor.
- It was launched at the first-ever UN Ocean Conference in New York.

Way Forward:

- The topography of the ocean floor could help identify underwater hazards and inform sustainable marine resource management and infrastructure development.
- Researchers are also trying to understand new depths of individual oceans using the same technology guiding the movement of rovers on Mars.
- Researchers are studying even the deepest known place on Earth -- the Challenger Deep, which is 36,200 feet deep.

COVARSCAN

Why in news?

- Recently, the United States scientists have developed a new test to identify all current variants of coronavirus (COVID-19) quickly and accurately.
- The test, named CoVarScan, can detect all current variants of SARS-CoV-2 within hours by finding the signatures of eight hotspots on the deadly virus.

Significance:

- The test is as accurate as other methods used to diagnose Covid. The test successfully differentiate between all current variants of SARS-CoV-2.
- In most cases, scientists use genome sequencing to determine which variant of COVID-19 a patient has. The process is time-consuming and expensive too.
- To analyse the RNA sequence contained in the viruses, the tests also rely on sophisticated equipment.

How does CoVarScan work?

- During the research, the CoVarScan had 96 per cent sensitivity and 99 per cent specificity as compared to whole genome sequencing.
- The CoVarScan test detects eight regions of SARS-CoV-2 that commonly differ between viral variants. It detects small mutations to measure the length of repetitive genetic regions that tend to grow and shrink as the virus evolves.
- The method relies on polymerase chain reaction (PCR) to copy and measure the RNA at these eight sites of interest.

INDIAN IMMUNOLOGICALS LAUNCHES NATIONWIDE ANTI-RABIES VACCINE DRIVE

Why in news?

- Recently, Indian Immunologicals Limited (IIL) organised a nationwide free vaccination camp against zoonotic diseases on account of World Zoonosis Day 2022.
- IIL will administer 1 lakh doses of Raksharab and Starvac R (Anti-rabies vaccines of IIL) free of cost, to realize the vision of 'One health', a collaborative effort towards optimal health for humans and animals through innovative healthcare products.

What is World Zoonosis Day?

- World Zoonosis Day is held annually on July 6, worldwide, to raise awareness about the infectious diseases collectively termed zoonotic diseases.
- The day is celebrated in memory of Louis Pasteur, a French biologist who, on July 6, 1885, successfully administered the first-ever Rabies vaccine to a patient named Joseph Meister.

What is Zoonosis?

- Zoonotic diseases originate in animals and can spread to humans.

- ⇒ Infections occur through bites or contact with the infected animal's bodily fluids.
- ⇒ Virus, bacteria, fungi, prions or parasites cause zoonosis.
- ⇒ Rabies, Ebola, certain strains of Swine flu, leptospirosis, brucellosis, anthrax, Zika and Ebola viruses, rickettsioses, plague, chikungunya, dengue and Japanese encephalitis, are the most notorious zoonotic diseases.
- ⇒ The diseases are endemic in tropical regions and are a risk factor in economically challenged and developing nations.

India, a potential hotspot for zoonotic diseases:

- ⇒ A recent report from the State of the World's Forests 2022 predicts India as a potential hotspot for zoonotic viral diseases.
- ⇒ About 70% of all emerging diseases such as rabies, swine flu, nipah, brucellosis, leptospirosis, porcine cysticercosis and zika that affect humans are zoonotic in nature.
- ⇒ In their fight against the spread of such zoonotic viruses, IIL's vaccination camp was escalated to 100 cities across the country through veterinary dispensaries, veterinary colleges and NGOs.

HOX GENES

Why in news?

- ⇒ Researchers at New York University recently created artificial Hox genes using new synthetic DNA technology and genomic engineering in stem cells.

Details:

- ⇒ They discovered that these gene-dense clusters alone contain all of the information needed for cells to decode a positional signal and remember it, which suggests that the compact nature of Hox clusters is what helps cells learn their location.

What are hox genes?

- ⇒ Almost all animals from humans to fish have an anterior-posterior axis, which is a line that runs from head to tail.
- ⇒ In the gestational stage, Hox genes act as architects, and direct the roadmap for where cells go along the axis, as well as what body parts they make up.
- ⇒ Hox genes ensure that organs and tissues develop in the right place, such as ensuring the limbs in mammals or the wings of birds end up at their correct anatomical positions.
- ⇒ If Hox genes fail through mis-regulation or mutation, cells can get lost, playing a role in some cancers, birth defects, and miscarriages.

Challenges:

- ⇒ Despite their importance in development, Hox genes are challenging to study. They are tightly organised in clusters.
- ⇒ While many parts of the genome have repetitive elements, Hox clusters have no such repeats.

- ⇒ These factors make them unique but difficult to study with conventional gene editing techniques without affecting neighbouring Hox genes.

Way Forward:

- ⇒ The creation of synthetic DNA and artificial Hox genes paves the way for future research on animal development and human diseases.

MUMBAI'S CSMT BECOMES FIRST STATION TO HAVE AUGMENTED REALITY EXPERIENCE

Why in news?

- ⇒ The Chhatrapati Shivaji Maharaj Terminus in Mumbai has become the first railway station in India to be equipped with augmented reality screens.

Salient Features:

- ⇒ The futuristic technology will allow passengers at the station to get real-time digitised time-table with a dedicated scrolling screen and railway information for an engaging experience.
- ⇒ The passengers will also be able to meet animals, witness magic tricks and snowfall, and visit any place in the world virtually.
- ⇒ The project at Mumbai's busiest railway station aims to generate revenue for Central Railway and offer passengers fun and infotainment during wait periods.

How it will work?

- ⇒ Augmented reality magic mirrors create a virtual world around the person standing in front of the screen.
- ⇒ The content will change each month depending on the occasions to keep the passengers engaged. The digital train schedule will also be updated from time to time.

Sleeping pods:

- ⇒ Apart from the augmented reality mirror screen, Central Railway also threw open the pod hotel at Chhatrapati Shivaji Maharaj Terminus.
- ⇒ Sleeping pods are a Japanese concept that allows railway passengers to get rest at the stations without having to pay a heavy price.

EASING LEARNING FOR CHILDREN WITH ASD USING ROBOTS

Why in news?

- ⇒ Recently, researchers studied the use of toy robots in assisting learning for children with autism spectrum disorder.

Scope:

- ⇒ Teaching children with Autism Spectrum Disorder poses many challenges for special educators working in this area. One of these challenges is that the interventions needed are highly specific to each child.

- ⇒ In a class, therefore, when handling more than one child, the teacher may benefit from support offered by robotic assistants.

How the role of Artificial Intelligence (AI) and toys in the learning process of children with neurodevelopmental challenges was evaluated?

- ⇒ One part of the work was to study the effectiveness of interventions using a toy robot, Cozmo; the other part was to try and use drones to help children with motivational issues – for instance, motivating them to exercise if they were not inclined per se to do so (for instance, with hypotonia).
- ⇒ They started the experiments with Cozmo in 2019. In 2020, due to the lockdown, they had to try online experiments. They started with seven children to be taught, and at the end of the experiments, they had to manage with four children.
- ⇒ The goals were threefold; what it takes to understand the interaction between the special educator, child and robot; focus on helping not only the child but also the special educator in reducing their workload; designing the interactions and evaluation metrics.
- ⇒ The interventions were designed to be in keeping with the Individualised Education Plan (IEP) that was in place for each child, comprising not only formal education goals but also special needs such as social communication or motor skills.

Award and citation:

- ⇒ The work has already seen the limelight, and Ms. Paul has won the Murthy Govindaraju “Women in Computer Science” endowment award 2022, which comprises a cash prize of Rs. 1,00,000 and a citation to the awardee.
- ⇒ The award has been instituted by Madhukar C. Govindaraju, alumnus of IISc, and his wife, Chaya Murthy Govindaraju, to promote excellence of women in computer science and to advance the computer science area among young professionals, especially women students.

ANCIENT JAWBONE DUG UP IN SPAIN'S BURGOS CITY

Why in news?

- ⇒ Archaeologists in Spain had dug up an ancient jawbone that could help them look into the face of some of the earliest human ancestors in Europe.

Key Highlights:

- ⇒ The fossilised fragment of an upper jaw and cheekbone was found near caves in the Atapuerca Mountains in northern Spain's Burgos province, the site of other ancient remains.
- ⇒ The scientists were still working on identifying the specific kind of human ancestor and determining the bone's age.

Way Forward:

- ⇒ The found a fossil is very important and interesting that belongs to one of the first populations that arrived in Europe.
- ⇒ The surprise find, which could be about 1.4 million years old, could also give vital clues to the evolution of the human face over the millennia.

IIT-K SETTING UP AIR-QUALITY SENSORS

Why in news?

- ⇒ To bolster measurement of air pollution in rural India, the Indian Institute of Technology, Kanpur, is embarking on a \$2.5 million project to install nearly 1,400 sensors in the rural blocks of Uttar Pradesh and Bihar.
- ⇒ The three-year project is expected to be a pilot that, going ahead, could pave the way for a national network of air quality sensors in rural India.

National Clean Air Programme (NCAP):

- ⇒ In 2019, the government launched the National Clean Air Programme (NCAP) to reduce particulate matter air pollution by 20-30% by 2024. This, however, is primarily aimed at 122 cities that have been categorised as India's most polluted cities.
- ⇒ At its launch, government had committed to increasing the network of rural air pollution monitoring sensors but little progress has been made on that front.
- ⇒ Despite having several cities in the world's list of the most polluted cities in the world, India still has very few sensors relative to the size of its population due to which the magnitude of the air pollution crisis is obscured.
- ⇒ Cities, because of their population density and industrial establishments, continue to be the overwhelming source of emissions. The country's current annual safe limits for PM 2.5 and PM 10 are 40 micrograms/per cubic metre (ug/m³) and 60 micrograms/per cubic metre.

Financial outlay of NCAP:

- ⇒ Under NCAP, ₹375.44 crore was provided to 114 cities from 2018-19 to 2020-21 and Rs. 290 crore was allocated to 82 cities for the financial year 2021-22.
- ⇒ The programme has an allocation of Rs. 700 crore envisaged for 2021-26.

Significance:

- ⇒ Air pollution in India is largely framed as an urban blight though causes of pollution, such as biomass burning and reliance on diesel generators for electricity, are worsening air quality in villages too.
- ⇒ The outcomes from this network will help local communities, policy makers and researchers understand the ground situation.
- ⇒ Data from this network will also be made available in real-time to enable actionable and evidence-based decision-making.

BIOSENSORS TO EASE DRUG MANUFACTURING

Why in news?

- Scientists at the University of Texas in the US have developed a new tool that could improve drug manufacturing in bacterial cells.
- While using bacteria has been suggested as a good organic alternative, detecting and optimising the production of therapeutic molecules is difficult and time-consuming.

Sustainable alternative:

- Most of the medicine are made with ingredients extracted from plants and extraction is a complicated and resource-intensive work.
- Meanwhile, bacteria is a cheap, efficient and sustainable alternative and its genetic code can be easily manipulated to become factories for drug production. Bacteria's biological systems can be harnessed to produce specific molecules as part of the natural cellular process.

Biosensor system:

- They introduced a biosensor system, derived from E. coli bacteria, that can be adapted to detect all kinds of therapeutic compounds accurately and in mere hours.

How it will work?

- There are currently no biosensors for most plant metabolites. With this technique, it should be possible to create biosensors for a wide range of medicines.
- The biosensors quickly and accurately determine the amount of a given molecule that a strain of bacteria is producing. The team developed the biosensors for several types of common drugs, such as cough suppressants and vasodilators, which are used to treat muscle spasms.
- Molecular images of the biosensors show exactly how they tightly grab onto their partner drug. When the drug is detected by the biosensor, it glows.
- Additionally, they engineered their own bacteria to produce a compound found in several FDA-approved drugs and used the biosensors to analyze product output.

Way Forward:

- This research opens the door to more medicines being produced using biosynthesis.

DCGI APPROVES INDIA'S FIRST QHPV VACCINE TO TREAT CERVICAL CANCER

Why in news?

- India's first Quadrivalent Human Papillomavirus vaccine (qHPV) against cervical cancer gets Drugs Controller General of India's (DCGI) approval for market authorisation.
- This vaccine will be manufactured by the Serum Institute of India (SII).

Key Highlights:

- Quadrivalent human papillomavirus (qHPV) vaccine is for cervical cancer patients above 9 years to 26 years of age.
- It is expected that vaccine will be launched in the market before the year-end.

Background:

- The National Technical Advisory Group on Immunisation (NTAGI) had recently also approved the qHPV after reviewing the clinical trial data of the vaccine.
- The Subject Expert Committee on June 15 recommended Serum Institute of India (SII)'s indigenously developed Quadrivalent human papillomavirus (qHPV) vaccine against cervical cancer for regular market authorisation.
- The phase 3 data of the vaccine was found satisfactory after which recommendations were made.

What's next?

- For the first time, there will be an Indian HPV vaccine to treat cervical cancer in women that is both affordable and accessible.

CHINESE SCIENTISTS DEVELOP ROBOT FISH THAT GOBBLE UP MICROPLASTICS

Why in news?

- Chinese scientists came up with a new idea to the concept of robot fish.
- There is an inbuilt feature to these robotic fish that helps them eat microplastics from the water body they are kept in.
- This feature of eating away all the microplastics might one day help in cleaning up all the polluted oceans or other water bodies.

What is robot fish?

- A robot fish is a type of bionic robot that has the shape and locomotion of a living fish.
- The robot fish are soft to touch similar to that of real fishes and are just 1.3 centimeters (i.e. 0.5 inches) in size.

Key Highlights:

- These fishes is that they can swim upto 2.76 body lengths per second, faster than most artificial soft robots.
- These fishes are able to absorb pollutants and recover themselves even when it is damaged.
- These black robot fishes left in water can still be controlled by the scientists from outside to avoid crashing into other fishes or ships for that matter with the irradiated light feature.
- It is made keeping in mind the safety of other fishes: If it is accidentally eaten by other fish, it can be digested without any harm as it is made from polyurethane, which is also biocompatible.

- ⇒ The fish is able to absorb pollutants and recover itself even when it is damaged.

Way Forward:

- ⇒ They have already tested the efficiency of the fishes in getting rid of the microplastics, by keeping them in the shallow water where they sucked up all the microplastics away.
- ⇒ The main aim of the team is to enable them to collect microplastics in deeper water and provide information to analyse marine pollution in real time.

25 MILLION CHILDREN MISSED OUT DTP VACCINES: UN

Why in news?

- ⇒ A recent data by the World Health Organisation and UNICEF recorded the largest sustained decline in global childhood vaccinations in approximately 30 years.
- ⇒ India, Nigeria, Indonesia, Ethiopia and the Philippines have recorded the highest number of children who did not receive their vaccines against diphtheria, tetanus and pertussis in 2021.

Key Highlights:

- ⇒ It said the percentage of children who received three doses of the vaccine against diphtheria, tetanus and pertussis (DTP3) fell 5 percentage points between 2019 and 2021 to 81 per cent.
- ⇒ As a result, 25 million children missed out on one or more doses of DTP through routine immunisation services in 2021 alone. This is two million more than those who missed out in 2020 and six million more than in 2019, highlighting the growing number of children at risk from devastating but preventable diseases.
- ⇒ According to the data, 18 million of the 25 million children did not receive a single dose of DTP in 2021, the vast majority of whom live in low- and middle-income countries.
- ⇒ Among countries with the largest relative increases in the number of children who did not receive a single vaccine between 2019 and 2021 are Myanmar and Mozambique.
- ⇒ Vaccine coverage dropped in every region, with the East Asia and Pacific region recording the steepest reversal in DTP3 coverage, falling nine percentage points in just two years.

Factors for decline:

- ⇒ The decline was due to many factors including an increased number of children living in conflict and fragile settings where immunisation access is often challenging, increased misinformation and COVID-19 related issues such as service and supply chain disruptions, resource diversion to response efforts, and containment measures that limited immunisation service access and availability.

Inadequate coverage:

- ⇒ Globally, over a quarter of the coverage of HPV vaccines that was achieved in 2019 has been lost. This has grave consequences for the health of women and girls, as global coverage of the first dose of human papillomavirus (HPV) vaccine is only 15 per cent, despite the first vaccines being licensed over 15 years ago.
- ⇒ It was hoped that 2021 would be a year of recovery during which strained immunisation programmes would rebuild and the cohort of children missed in 2020 would be caught-up.
- ⇒ Instead, DTP3 coverage was set back to its lowest level since 2008 which, along with declines in coverage for other basic vaccines, pushed the world off-track to meet global goals.
- ⇒ Inadequate coverage levels have already resulted in avoidable outbreaks of measles and polio in the past 12 months, underscoring the vital role of immunisation in keeping children, adolescents, adults, and societies healthy.

Immunisation Agenda 2030:

- ⇒ WHO and UNICEF are working with Gavi, the Vaccine Alliance, and other partners to deliver the global Immunisation Agenda 2030 (IA2030).
- ⇒ It is a strategy for all countries and relevant global partners to achieve set goals on preventing diseases through immunisation and delivering vaccines to everyone, everywhere, at every age.

HINDUSTAN ZINC GETS TO SET UP 30 KTPA PLANT

Why in news?

- ⇒ Vedanta group firm Hindustan Zinc is looking at expanding its footprint in the production of zinc alloys and HZAPL has received approval to set up a 30 kilo tonnes per annum plant (KTPA).
- ⇒ Hindustan Zinc Alloys Pvt Ltd (HZAPL) is a subsidiary of Hindustan Zinc.

Details:

- ⇒ The plant would be set up at Dariba, in Rajasthan.
- ⇒ The company is also investing in the development of new products through down-stream applications.

Focus area:

- ⇒ The company's key focus area in this context is innovation of new products in lead alloys and increased penetration of zinc alloys.
- ⇒ The company has also got the go-ahead from board to undertake a long-term captive renewable power development plan, up to a capacity of 200 mw, in furtherance of its net-zero goal.
- ⇒ The move is in line with the company's strategic purpose of reducing dependence on thermal power by scaling up the renewable energy to cover 50 per cent of our energy requirement in the next three years and

reduce the greenhouse gas (GHG) emissions from its operations.

Net-zero commitment:

- During FY'22, it has also signed a pact with CDP science-based incubator programme for setting targets for net-zero commitment.
- The company is continually working towards reducing its carbon footprint and lowering the impact of its business on the environment.
- These efforts are aimed to improve operational efficiencies, ensure optimal utilisation of natural resources, and increase the use of renewable energy in its plants and processes.

Way Forward:

- The move will make way for the production of value-added zinc alloy products and enable the company to deliver international quality products in the domestic market.

MARBURG VIRUS

Why in news?

- Recently, two cases of the deadly Marburg virus have been identified in Ghana, the first time the Ebola-like disease has been found in the West African nation.
- No treatment or vaccine exists for Marburg, which is almost as deadly as Ebola.
- The WHO said Guinea had confirmed a single case in an outbreak declared over in September 2021.

Symptoms of Marburg:

- According to the Centre for Disease Control and Prevention, once a patient is affected by the virus after an incubation period of two to 21 days, the person might suffer with nausea, chest pain, a sore throat, abdominal pain and diarrhoea.
- Symptoms can become more severe over time and can cause jaundice, inflammation of the pancreas, weight loss, delirium, shock, liver failure, haemorrhaging and even multi organ dysfunction.

Transmission:

- The virus can be transmitted to humans as a result of long exposures in mines or caves that are inhabited by Rousettus bat colonies, which are considered to be the natural hosts of Marburg.
- Detection of the Marburg virus can be difficult as many of the signs and symptoms of the virus are similar to other infectious diseases such as malaria or typhoid.
- The average case fatality rate of Marburg is around 88 per cent.

Previous outbreaks:

- Marburg virus was first detected in 1967, when the outbreak occurred in Marburg and Frankfurt in Germany and in Belgrade, Serbia.

- Previous outbreaks and sporadic cases of Marburg in Africa have been reported in Angola, the Democratic Republic of the Congo, Kenya, South Africa and Uganda, according to the World Health Organization.

How can the virus be treated?

- While there are no vaccines or antiviral treatments available for Marburg virus, monoclonal antibodies that are used to treat Ebola virus can also be tested for Marburg.
- Apart from this, rehydration with oral or intravenous fluids as well as treatment of specific symptoms might increase the chances of survival, according to Mayo Clinic.

LARGEST CANYON IN SOLAR SYSTEM

Why in news?

- The European Space Agency has examined the largest canyon in the solar system as its spacecraft hovers above Mars beaming back new details about the 4000-kilometer-long structure.
- The latest images from Mars reveal over two ruptures in the Martian crust that form part of the mega-canyon system.

Valles Marineris:

- The Valles Marineris is the largest grand canyon found in the entire solar system.
- It spans over 7000 kilometers in length, is upto 200 kilometers wide, and upto seven kilometers deep.

Key details:

- ESA's Mars Express captured two trenches (or chasma) that form part of the western Valles Marineris.
- The left part of the image contains the 840 km-long IusChasma, and on the right is the 805 km-long TithoniumChasma.
- The European Space Agency, along with the image, also released an elevation map of the massive structure to show the depth of the canyon.
- Nearly seven kilometers deep, the Alps' tallest mountain, Mont Blanc, would be dwarfed if it was put inside TithoniumChasma.
- The entire canyon itself will span the distance from the northern tip of Norway to the southern tip of Sicily.

Formation:

- While the Grand Canyon that cuts across the United States was formed as the Colorado River eroded away rock, the canyon on Mars is a result of drifting apart of tectonic plates.
- Their surfaces have been strongly eroded by Mars' strong winds, indicating that they are made of a weaker material than the surrounding rock.
- The top of TithoniumChasma, a patch of dark sand brings colour contrast to the image and that this sand may have come from the nearby Tharsis volcanic region.

Mars Express:

- The images were captured by the Mars Express, which has been mapping the length and breadth of the Red Planet since 2003.
- The spacecraft has been imaging Mars' surface, mapping its minerals, identifying the composition and circulation of its tenuous atmosphere, probing beneath its crust, and exploring how various phenomena interact in the Martian environment.

BIOLUMINESCENCE IN CHENNAI BEACHES: NCCR STUDY

Why in news?

- Recently, the National Centre for Coastal Research (NCCR) released a study focused on the occurrence of bloom along a 16-km stretch following a spell of heavy rain in August 2019.

Key Findings:

- Adequate nutrients brought by substantial rain and a high abundance of the plankton, called diatom *Thalassiosira* sp. triggered the (bioluminescent) bloom of *Noctiluca scintillans*.
- The plankton is available in the ocean and due to nutrition available, it will multiply and becomes the bloom.
- Low wind speed, lowering of atmospheric temperature, high rain and low sea surface temperature are cited as probable environmental cues.
- Local hydrodynamics and the diverging currents governed the presence and dispersion of the sudden outbreak of the bioluminescent dinoflagellate *Noctiluca scintillans* bloom in the region.

After decline in bloom:

- The paper explained that once the bloom reduces, there is an increase in bacterial population associated with the phyto-plankton bloom. The lowest count was recorded on the Panaiyurkuppam beach and the maximum on Elliot's Beach. Total coliform too was recorded in the waves.
- Bioluminescence was observed owing to turbulence and intense wave breaking in the surf zone, stimulating bioluminescence in *Noctiluca scintillans* cells.
- Within two days after the appearance of bioluminescence, the blooming cells slowly degenerated and moved away by the current, and finally declined.

SURFACE WATER AND OCEAN TOPOGRAPHY (SWOT) SATELLITE

Why in news?

- A joint satellite developed by the US and Europe will conduct a global freshwater survey to find hidden reservoirs of water.

- Developed jointly by NASA and the French space agency Centre National d'Études Spatial (CNES), the mission will fill the enormous gap in data about sources of water on the planet.

Mandate:

- While the world is made of 75 per cent of water, only a limited fraction of it can be used and consumed in daily life. Limited information and in some cases no information about river systems active in the world could prove detrimental to a world already facing water crises.
- To identify these hidden sources, the Surface Water and Ocean Topography (SWOT) satellite will map the planet. The satellite will provide a better understanding of Earth's water cycle, aid in better management of water resources, and expand knowledge of how climate change affects lakes, rivers, and reservoirs.

What is SWOT Mission?

- The satellite will measure the height of water bodies on Earth's surface. It will also be equipped to see features like eddies less than 100 kilometers across in the ocean.
- The SWOT will also measure more than 95 per cent of Earth's lakes larger than 15 acres and rivers wider than 330 feet across.
- The spacecraft will use a Ka-band Radar Interferometer (KaRIn), which bounces radar pulses off the water's surface and receives the return signal with two antennas at the same time. The radar will be able to gather information along a roughly 120-kilometer-wide area of the planet at once.
- The spacecraft, along with measuring the water height whether it be in a lake, river, or reservoir, will also measure its extent, or surface area. That crucial information will enable scientists to calculate how much water moves through freshwater bodies.

Significance:

- Scientists have long speculated that climate change is accelerating Earth's water cycle. Warmer temperatures mean the atmosphere can hold more water (in the form of water vapor), which can cause rain storms to be stronger than a region might typically see. The change could lead to major consequences for global agriculture and food production.
- As Earth's water cycle intensifies, predicting future extreme events like floods and droughts requires monitoring both changes in water supply from the ocean and water demand and usage on land.

What's next?

- The SWOT mission is scheduled to launch in November from Vandenberg Space Force Base in California.

JUPITER ICY MOONS EXPLORER (JUICE) MISSION

Why in news?

- The Jupiter Icy Moons Explorer (JUICE) mission, being developed by the European Space Agency, will launch in April 2023 on an Ariane-5 rocket from Europe's Spaceport in French Guiana.
- The destination will be the humongous Jupiter system that will be uncovered layer by layer in a series of 35 Jovian moon flybys.

Focus:

- When the Juice mission arrives in this system, it will uncover the secrets that could make Jupiter a potential candidate for long-term exploration and even a target for future interplanetary missions.

Key Highlights:

- The spacecraft, which is equipped with 85 square meter solar wings, will make detailed observations of the giant gas planet and its three large ocean-bearing moons Ganymede, Callisto, and Europa.
- The spacecraft will use remote sensing, geophysical, and in situ instruments to characterise these moons as both planetary objects and possible habitats while also exploring Jupiter's complex environment in-depth, and studying the wider Jupiter system as an archetype for gas giants across the Universe.
- The Galilean Moons, four large moons of Jupiter Io, Europa, Ganymede, and Callisto, have long been speculated to have conditions that could one day support life. The Juice mission will provide measurements to determine the positions of the Galilean moons with unprecedented accuracy.
- The mission will give insight into energy exchanges between the giant planet and its natural satellites, and between the satellites themselves, providing information on the past evolution of the orbits and even the origin and formation of Jupiter and the moons themselves.

Way Forward:

- While Jupiter remains a big part of the exploration, Juice will also look to deep dive into Ganymede, the largest moon in the Solar System larger than Pluto and Mercury.
- It will find answers to why it is the only Moon to have an intrinsic magnetic field.

ELEPHANT ENDOTHELIO TROPIC HERPESVIRUS (EEHV) IN SWITZERLAND

Why in news?

- Recently, a deadly virus swept through Zurich's zoo, killing three Asian elephants in a month and leaving experts stumped as to how to stop its spread.

- The zoo has only Asian five elephants roaming its 11,000-square-metre (118,400-square-foot) elephant enclosure.

Details:

- Two-year-old bull Umesh was the first to fall victim to the Elephant endotheliotropic herpesvirus (EEHV) at the end of June, followed just days later by his eight-year-old sister Omysha.
- Recently, Ruwani, a five-year-old female from a second matriarchal herd also died.
- They succumbed to the herpesvirus, which leaves young Asian elephants with internal bleeding and organ failure.

EEHV:

- In captivity, this virus is the main cause of death for elephants between two and eight years.
- The virus has also been known to kill elephants in the wild.
- There is no vaccine, and while antivirals exist, they are not very efficient and even when elephants are treated quickly, only about a third of them survive.

Asian elephants:

- Asian elephants, which can live up to around 60 years old, are listed by the IUCN as an endangered species, with only about 50,000 left in the wild.
- Deforestation, urban sprawl and agricultural development have robbed them of their natural habitat, while poaching and the illegal ivory trade also threaten many herds.

'BLACK WIDOW' IS HEAVIEST- KNOWN NEUTRON STAR

Why in news?

- Astronomers have observed the most massive known example of an object called a neutron star, one classified as a 'black widow' that got particularly bulky by gobbling up most of the mass of a stellar companion trapped in an unhappy cosmic marriage.
- The neutron star, wildly spinning at 707 times per second, has a mass about 2.35 times greater than that of our sun, putting it perhaps at the maximum possible for such objects before they would collapse to form a black hole.

Black hole's event horizon:

- A black hole's event horizon is the point of no return beyond which anything including light gets sucked in irretrievably.
- The neutron star, residing in our Milky Way galaxy in the direction of the constellation Sextans and formally named PSR J0952-0607, is located roughly 20,000 light years from Earth.
- A light year is the distance light travels in a year, 5.9 trillion miles (9.5 trillion km). The researchers studied it using the Keck I telescope in Hawaii.

- Stars that are about eight or more times the sun's mass transform hydrogen into heavier elements through thermonuclear fusion in their cores. When they build up about 1.4 times the mass of our sun in iron, that core collapses into a neutron star having a diameter only about the size of a city, with the rest blown off in the supernova explosion.
- Its matter is so compact that an amount about the size of a sugar cube would outweigh Mount Everest.

The black widow:

- This neutron star inhabits what is called a binary system, in an orbit with another star. The neutron star is a kind dubbed a 'black widow', named in honor of female black widow spiders that eat their male partners after mating.
- It apparently was born with the usual mass of a neutron star, about 1.4 times that of our sun, but its gravitational pull poached material from its companion star, enabling it to grow to a mass seemingly at the uppermost limit before physics would dictate a collapse into a black hole, the densest of all known objects.
- Its companion star has been stripped almost bare, losing perhaps 98% of its mass to the black widow, leaving it at about 20 times the mass of our solar system's largest planet Jupiter.

What is a neutron star?

- A neutron star is the compact collapsed core of a massive star that exploded as a supernova at the end of its life cycle.
- The one described by the researchers is a highly magnetized type of neutron star called a pulsar that unleashes beams of electromagnetic radiation from its poles.
- As it spins, these beams appear from the perspective of an observer on Earth to pulse - akin to a lighthouse's rotating light. Only one other neutron star is known to spin more quickly than this one.

IISC, INDIAN NAVY SIGN MOU TO COLLABORATE ON AVIATION RESEARCH AND DEVELOPMENT

Why in news?

- The Indian Institute of Science (IISc), Bengaluru and the Indian Navy have signed an MoU to collaborate on aviation research and development, and to ramp up self-reliance efforts for the Indian Navy, in line with the goals of 'Atmanirbhar Bharat'.
- The MoU provides a formal basis for the Indian Navy to interact with relevant faculty members at IISc and will promote joint research programmes in areas of mutual interest.

Areas of collaboration:

- The areas of collaboration under this MoU will fall under the domain of Aerospace/Aeronautical

Engineering, including design and education technology.

- Specialisations that will be under focus include Propulsion and Propulsion Systems, Steel Technology, Metallurgy and Material Sciences, and Corrosion Science; Systems and Controls, Instrumentation and Sensors; Environmental Science and Engineering, Energy Science and Engineering; Management (Technical and Logistics), Industrial Engineering and Operational Research, Nanotechnology and MEMS (Micro Electro Mechanical Systems), Artificial Intelligence, Data Analytics, and Machine Learning.

Way Forward:

- The collaboration will foster regular interactions between IISc faculty members and officers of the Indian Navy.

CULTURE

MANGARH HILLOCK IN RAJASTHAN, A MONUMENT OF NATIONAL IMPORTANCE

Why in news?

- Recently, a team from National Monuments Authority submitted a report on declaring Mangarh hillock in Rajasthan as a monument of National Importance in the year of Azadi Ka Amrit Mahotsav, to Ministry of Culture.
- This report carries relevant details about the Mangarh hillock and recommendations by National Monuments Authority.

Historical aspect of Mangarh hillock:

- The hillock, situated at the Gujarat-Rajasthan border, is a site of a tribal uprising where a massacre of over 1500 Bhil tribal freedom fighters took place in 1913.
- The place is also known as the Adivasi Jallianwala, and there has been a demand to build a memorial.
- On November 17, 1913, British forces opened fire on tribals gathered at the site who were holding a meeting in protest, led by a leader from the community Govind Guru, killing over 1,500.

INDIA GETS ELECTED TO THE INTERGOVERNMENTAL COMMITTEE OF UNESCO'S 2003 CONVENTION FOR THE SAFEGUARDING OF THE INTANGIBLE CULTURAL HERITAGE

Why in news?

- Recently, India has been elected as a member of the Intergovernmental Committee of UNESCO's 2003 Convention for the Safeguarding of the Intangible Cultural Heritage for the 2022-2026 cycle.
- In the past, India has served two terms as a member of the Intergovernmental Committee of this Convention. One from 2006 to 2010 and the other from 2014 to 2018.

Background:

- The elections for the Intergovernmental Committee took place during the 9th General Assembly of the 2003 Convention held at UNESCO headquarters, Paris.
- Against the four seats falling vacant within the Asia-Pacific group, six countries, namely, India, Bangladesh, Vietnam, Cambodia, Malaysia, and Thailand had presented their candidature. India received 110 votes from the 155 State Parties that were present and voting.

About Intergovernmental Committee of the 2003 Convention:

- The Intergovernmental Committee of the 2003 Convention consists of 24 members and is elected in the General Assembly of the Convention according to the principles of equitable geographical representation and rotation.
- States Members to the Committee are elected for a term of four years.

Functions:

- Some of the core functions of the Intergovernmental Committee include promoting the objectives of the Convention, providing guidance on best practices, and making recommendations on measures for the safeguarding of intangible cultural heritage.
- The Committee also examines requests submitted by States Parties for the inscription of intangible heritage on the Lists as well as proposals for programmes and projects.

India's ratification:

- India ratified the 2003 Convention for the Safeguarding of the Intangible Cultural Heritage in September 2005.
- With 14 inscriptions on the Representative List of Intangible Cultural Heritage of Humanity, India also ranks high in the listing of intangible cultural heritage.
- After the inscription of Durga Puja in 2021, India submitted the nomination for Garba of Gujarat to be discussed in 2023.

Opportunities for India:

- As a member of the intergovernmental committee, India will have the opportunity to closely monitor the implementation of the 2003 Convention.
- With the aim of strengthening the scope and impact of the Convention, India seeks to mobilize the capacity of different actors worldwide in order to effectively safeguard intangible heritage.
- Also noting the imbalance in the inscriptions on the three lists of the Convention, i.e., Urgent Safeguarding List, Representative List and Register of Good Safeguarding Practices, India shall endeavour to encourage international dialogue within the State Parties to the Convention in order to better showcase the diversity and importance of living heritage.

**SITES ASSOCIATED WITH DR. AMBEDKAR
TO BE DECLARED AS MONUMENTS
OF NATIONAL IMPORTANCE**

Why in news?

- Recently, the National Monuments Authority has recommended two sites associated with Dr Ambedkar, to be declared as Monuments of National importance.

Sites recommended:

- NMA has recommended that Sankalp Bhumi Banyan tree campus in Vadodara, where Dr. Ambedkar had taken a resolve to eradicate untouchability on 23th September, 1917 be declared as Monument of National Importance.
- This place is more than hundred years old and a witness to the beginning of social respect revolution heralded by Dr. Ambedkar.
- NMA has also recommended a place in Satara (Maharashtra) where Bhim Rao Ramji Ambedkar received his primary education in Pratap Rao Bhosle High School to be declared as monument of National importance.
- The school register still shows with pride a child student Bhim Rao's signatures in Marathi. The school, now under Zila Parishad is in a dilapidated condition.

About NMA:

- National Monuments Authority (NMA) under the Ministry of Culture, Govt. of India has been setup as per provisions of The Ancient Monuments and Archaeological Sites and Remains AMASR (Amendment and Validation) Act, 2010 which was enacted in March, 2010.
- Several functions have been assigned to the NMA for the protection and preservation of monuments and sites through management of the prohibited and regulated area around the centrally protected monuments.
- One amongst these responsibilities of NMA is also to consider grant of permissions to applicants for construction related activity in the prohibited and regulated area.

'DIGITAL JYOT' CAMPAIGN

Why in news?

- Recently, the Prime Minister tweeted that a sky beam light has been installed at the Central Park in Delhi, and every tribute paid will intensify the illumination of the Digital Jyot.
- He also urged people to take part in this unique endeavour and strengthen AzadiKaAmritMahotsav.

What is Digital Jyot?

- According to the Ministry of Culture, the Digital Jyot symbolizes the glow of freedom that illuminates our lives.

- It is surrounded by an illuminated metallic floral sculpture inspired by the courage and determination of our freedom fighters and martyrs.
- The design finds its inspiration from nature and flowers linked to the ideas of hope, strength and positivity. The picture of the people lighting the lamp will also be flashed on the large LED screen in Central Park.

PARSHURAM CIRCUIT

Why in news?

- In a major step by the Uttar Pradesh state government, the Public Works Department (PWD) is all set to make a Parshuram pilgrimage circuit, a 500-km long corridor, which will connect five pilgrimages in six districts of Uttar Pradesh.

Key Highlights:

- The Parshuram circuit will connect NaimishDham, the center of faith of Hindus, Maharishi DadhichiSthalMisrikh, Golagokarnath, GomtiUdgam, PurnagiriMaa's temple border with Baba Neem KororiDham and Jalalabad Parshuram's birthplace.
- This circuit will pass through six districts of UP - Sitapur, Lakhimpur, Pilibhit, Bareilly, Shahjahanpur and Farukhabad.
- The PWD will construct the corridor along with the National Highways Authority of India (NHAI).
- The project will be undertaken at an estimated investment of over Rs 5,000 crore.

Way Forward:

- In addition to the Parshuram circuit, the state is already working on several religious circuits, including the Ayodhya 84 Kosi Marg, Buddha and Ramayana circuit.

ELLORA CAVES, FIRST MONUMENT IN INDIA TO GET HYDRAULIC LIFT

Why in news?

- Ellora Caves, the UNESCO world heritage site in Maharashtra's Aurangabad district, will become the first monument in the country to have a hydraulic lift.
- Situated around 30 km from Aurangabad city, Ellora is the one of the largest rock-cut temple complexes in the world, housing Hindu, Buddhist and Jain sculptures, and witnesses the highest tourist footfall in the region.

Why hydraulic lift?

- Of the 34 caves in the complex, cave number 16, popularly known as Kailash Cave, is a double-storey structure and tourists have to climb a staircase or go up a ramp to enjoy the view from the top.
- While the cave has a staircase and a ramp for smooth movement of wheelchairs, the Archaeological Survey of India (ASI) has proposed the installation of small lifts on both sides of the structure.

Accessibility:

- There will be no construction activity for installing these lifts. The mechanism will be small with 9 square feet area, in which a person in a wheelchair can easily go to the first floor.
- Tourists will also be able to see Kailash Cave, a single monolithic structure surrounded by hills, from the top and a route for the same will be constructed on the upper hill.
- The ASI plans to install lights for some paintings and carry out conservation work on some parts and the paperwork is underway to figure out the cost of the project.

Way Forward:

- All these projects were in different stages of sanction and implementation, and may take a year to complete.

MISCELLANEOUS

NEW 'OPEN' CATEGORY IN ELITE SWIMMING

Why in news?

- Recently, FINA introduced the new "open" category in elite swimming.

About FINA:

- FINA is the international federation recognised by the International Olympic Committee (IOC) for administering international competitions in water sports.
- It proposes rules and regulations for major aquatic sports such as swimming, diving, water polo among others.

Background:

- FINA recently barred transgender women from competing in elite women's competition. The move was welcomed by many and slammed by a section too.
- The debate around it started in March when freestyler Lia Thomas, a transgender athlete aced Olympic medley silver medallist Emma Weyant to win the prestigious US Collegiate title.

New open category:

- To protect the rights of the athletes to compete, and at the same time, to maintain competitive fairness at events, especially in the women's category, FINA introduced the new "open" category.
- It seeks to provide opportunities for transgender athletes to compete in FINA competitions in the category that reflects their gender identity and does not undermine FINA's goals for the women's category.

Testosterone in transwomen:

- As more and more transgender women participate in elite athletic competitions, there is an increasing view that trans-women who have transitioned into a female post the puberty still retain large amounts

- of testosterone, giving them competitive edge over women.
- A working science group set up by FINA found that post-pubescent males have circulating testosterone concentrations at least 15 times higher than post-pubescent females.
 - A biological female athlete cannot overcome that advantage through training or nutrition.
 - However, transgender men can compete in men's competition category as they gain no biological or physical advantage.

Way Forward:

- FINA's move could be seen as mainstreaming trans-women in society. It can serve as a platform for trans visibility also.
- Meanwhile, world soccer's governing body FIFA and World Athletics said they will revisit their transgender eligibility policies, taking guidance from medical, legal, scientific, performance and human rights experts.

VETERAN FILMMAKER TARUNMAJUMDAR PASSED AWAY

Why in news?

- Recently, Veteran filmmaker TarunMajumdar passed away.
- He was among the last of the great film directors from West Bengal who created a niche of their own, beyond the trinity of cinema legends such as Satyajit Ray, Mrinal Sen, and RitwikGhatak.

Honours:

- He was a four-time National Award winner and a Padma Shri conferree.
- Some of Majumdar's well-known films are BalikaBadhu (1967), Kuheli (1971), ShrimanPrithviraj (1973), Fuleswari (1974), DadarKirti (1980), BhalobasaBhalobasa (1985), and Apan Amar Apan (1990).
- He remade two of his hit films in Hindi – BalikaBadhu (1976) and Rahgir (1969, adapted from his 1963 film Palatak). Among his critically acclaimed movies are Nimantran (1971), SansarSimante (1975) and Ganadevata (1978).

DERECHO, A STORM THAT TURNED THE SKY GREEN IN THE US

Why in news?

- Recently, the States of Nebraska, Minnesota and Illinois in the US were hit by a storm system called a derecho.
- As the storm hit, it turned the skies green.

What is a derecho?

- A derecho is "a widespread, long-lived, straight-line windstorm" that is associated with a "band of rapidly moving showers or thunderstorms".

- The name comes from the Spanish word 'la derecha' which means 'straight'.
- Straight-line storms are those in which thunderstorm winds have no rotation unlike a tornado. These storms travel hundreds of miles and cover a vast area.
- Being a warm-weather phenomenon, a derecho generally occurs during summertime beginning May, with most hitting in June and July. However, they are a rare occurrence as compared to other storm systems like tornadoes or hurricanes.
- For a storm to be classified as a derecho it must have wind gusts of at least 93 km per hour; wind damage swath extending more than 400 km.

Why did the sky turn green during the derecho that hit US recently?

- Severe thunderstorms result in a 'green sky' due to light interacting with the huge amount of water they hold.
- It is believed that the big raindrops and hail scatter away all but the blue wavelengths due to which primarily blue light penetrates below the storm cloud.
- This blue then combines with the red-yellow of the afternoon or the evening sun to produce green.

Are there different types of derechos?

- They fall into three categories – progressive, serial and hybrid.
- A progressive derecho is associated with a short line of thunderstorms that may travel for hundreds of miles along a relatively narrow path. It is a summer phenomenon.
- A serial derecho, on the other hand, has an extensive wide and long line sweeping across a large area. It usually occurs during spring or fall.
- Hybrid ones have the features of both progressive and serial derechos.

Where do derechos usually occur?

- They mostly occur across central and eastern parts of the United States.
- Derechos have also been documented elsewhere across the world.
- In 2010, Russia witnessed its first documented derecho. They have also swept through Germany and Finland, and more recently in Bulgaria and Poland.

INDIAN CITIES IN TIME LIST OF EXTRAORDINARY DESTINATIONS

Why in news?

- The "God's own country" Kerala and Ahmedabad city have been listed by TIME magazine as two of the "50 extraordinary destinations to explore" in its list of the world's greatest places of 2022.
- The list also includes Ras Al Khaimah, UAE; Park City, Utah; Seoul; Great Barrier Reef, Australia; The Arctic; Valencia, Spain; Trans Bhutan Trail, Bhutan; International Space Station; Bogota; Lower Zambezi National Park, Zambia; Istanbul and Kigali, Rwanda.

What did it say about Ahmedabad?

- It said that as India's first UNESCO World Heritage City, Ahmedabad "boasts both ancient landmarks and contemporary innovations that make it a mecca for cultural tourism, from the serene Gandhi Ashram that sits on 36 acres on the banks of the Sabarmati River to Navratri, a vibrant nine-day celebration billed as the longest dance festival in the world."
- It also made it to the list of "50 extraordinary destinations to explore" for its Science City, "a sprawling entertainment center and theme park", which unveiled three major attractions in 2021.
- A 20-acre nature park to educate the public on local flora as well as provide new spaces for playing chess and practicing yoga. There is also a new interactive robot gallery that celebrates innovation in robotics and features a towering replica of a Transformer.
- Science City's new aquarium, which showcases aquatic species from around the globe, is now India's largest.

How did Kerala make it to the list?

- For the "ecotourism hot spot" in south India, Kerala is "one of India's most beautiful states. With spectacular beaches and lush backwaters, temples, and palaces, it's known as 'God's own country'."
- In 2002, Kerala is boosting motor-home tourism in India to inspire a new pas de deux of exploration and accommodation.
- The state's first caravan park, Karavan Meadows, opened in Vagamon, a scenic hill station.

68TH NATIONAL FILM AWARD WINNERS



Why in news?

- Recently, the 68th National Film Award winners were announced. Considering the Covid-related delays, it, honoured films from several categories from the year 2020.

About National Film Award:

- Established in 1954, the prestigious awards are administered by the Government of India's Directorate of Film Festivals.
- This year, over 300 feature films and 150 non-feature films from 50 categories, with over 30 languages were competing for the prizes.

Key Highlights:

- Madhya Pradesh wins Most Film Friendly State award while Uttarakhand and Uttar Pradesh get Special Mention.
- 'The Longest Kiss' by Kishwar Desai wins Best Book on Cinema for the year while Malayalam book 'MT AnunahvungaludePusthakam' and Odia book 'Kali Paine Kalira Cinema' win special mention.
- Author Kishwar Desai's "The Longest Kiss" is based on 10 years of research and 400 letters written by cinema icon Devika Rani.
- Best Actor award for 2020 is shared between Suriya for 'Sooraraipottru' and Ajay Devgn for the Hindi movie 'Tanhaji: The Unsung Warrior'.
- Manoj Muntashir has won the award for Best Lyrics for the Hindi movie 'Saina'.

Here is the list of winners of the 68th National Film Awards:

- Best Feature Film: Sooraraipottru
- Best Director: Sachy, AyyappanumKoshiyum
- Best Popular Film Providing Wholesome Entertainment: Tanhaji
- Best Actor: Suriya for Sooraraipottru and Ajay Devgn for Tanhaji
- Best Actress: AparnaBalamurali, Sooraraipottru
- Best Supporting Actor: Biju Menon, AyyappanumKoshiyum
- Best Supporting Actress: LakshmiPriyaChandramouli, SivaranjaniyumInnamSilaPengallum
- Best Screenplay: Sooraraipottru, ShaliniUsha Nair and SudhaKongara
- Best Screenplay (Dialogue Writer): MadonneAshwin, Mandela
- Best Music Direction (Songs): Ala Vaikunthapurramuloo, Thaman S
- Best Music Direction (Background Music): Sooraraipottru, GV Prakash
- Best Male Playback Singer: Rahul Deshpande for MiVasantrao
- Best Female Playback Singer: Nanchamma, AyyappanumKoshiyum
- Best Lyrics: Saina, ManojMuntashi
- Best Hindi Film: Toolsidas Junior
- Best Kannada Film: Dollu
- Best Malayalam Film: ThinkalazhchaNishchayam
- Best Tamil Film: SivaranjiniyumInnumSilaPengalum
- Best Telugu Film: Colour Photo

- ⇒ Best Haryanvi Film: Dada Lakhmi
- ⇒ Best Dimasa Film: Samkhor
- ⇒ Best Tulu Film: Jeetige
- ⇒ Best Marathi Film: GoshtaEkaPaithanichi
- ⇒ Best Bengali Film: Avijatrik
- ⇒ Best Assamese Film: The Bridge
- ⇒ Best Child Artist: Anish MangeshGosavi for Tak-Tak
- ⇒ Indira Gandhi Award for Best Debut Film of a Director: Mandela
- ⇒ Best Children's Film: Sumi
- ⇒ Best Cinematography: ShabdikkunnaKalappa, Nikhil S Praveen

WORLD BANK APPOINTS NEW CHIEF ECONOMIST

Why in news?

- ⇒ Recently, the World Bank has appointed Indermit Gill, an Indian national, chief economist and senior vice-president for development economics at the multilateral development bank.
- ⇒ His appointment will be effective September 1, 2022.

Second Indian:

- ⇒ He will be only the second Indian to serve as chief economist at the World Bank. Kaushik Basu was the first, having served in the job from 2012-2016.
- ⇒ RaghuramRajan and Gita Gopinath have served as chief economists at the International Monetary Fund.

About Indermit Gill:

- ⇒ He is widely respected for his intellectual contributions to development economics. Gill spearheaded the influential 2009 World Development Report on Economic Geography.
- ⇒ His pioneering work includes introducing the concept of the "middle income trap" to describe how developing countries stagnate after reaching a certain level of income.
- ⇒ He has published extensively on policy issues facing developing countries, sovereign debt, green growth, labour markets, poverty and inequality, and managing natural resource wealth.

RASHTRIYA KHANIJ PURASKAR- NATIONAL AWARD TO PROMOTE MINING



Why in news?

- ⇒ In order to incentivize the States who take initiative in exploration, auction and operationalisation of mineral blocks, Ministry of Mines has instituted a National level award scheme viz., RashtriyaKhanijPuraskar in three categories of minerals.

Details:

- ⇒ The award money is ₹3 cr, ₹2 cr, and ₹1 cr for 1st, 2nd and 3rd positions respectively in each category.
- ⇒ Award for the year 2019-20 & 2020-21 have been given during the 6th National Conclave on Mines & Minerals held in July 2022. A total of ₹18 Cr has been given as award money to different States.

Incentives:

- ⇒ Further, in order to encourage the States to auction mineral blocks, following incentives are provided by the Ministry of Mines:
 - a) ₹20 lakh to those States where potential mineral blocks are available for auction.
 - b) ₹20 lakh for each successful auction of mineral block conducted by the State Government.
 - c) Reimbursement of 50% of Transaction Advisor fee for conducting auction subject to a maximum of ₹5 Lakh for each block which was put up for auction but could not be successfully auctioned.



PRACTICE QUESTION FOR UPSC PRELIMS EXAM

1. Recently Business Reforms Action Plan (BRAP), 2020 was released. Consider the following statement:
 1. Andhra Pradesh, Gujarat and Telangana are among the seven states categorised as top achievers.
 2. The Aspires category too includes seven states, including Chhattisgarh, Jharkhand and Kerala.
 3. The Ministry of Finance has this time changed the system of ranking by making it category-based.
 Choose the correct option from the codes given below:

| | |
|------------|---------------|
| a) 1 and 2 | b) 2 and 3 |
| c) 1 and 3 | d) 1, 2 and 3 |

2. Consider the following statement regarding Snake Island:
 1. It is close to Sea border with Sweden.
 2. It has strategic value for the control of the northwestern Black Sea.
 3. It is located to the east of the mouth of the Danube and roughly southwest of Odessa.
 Choose the correct option from the codes given below:

| | |
|------------|---------------|
| a) 1 and 2 | b) 2 and 3 |
| c) 1 and 3 | d) 1, 2 and 3 |

3. Recently, the ISRO launched three satellites for Singapore. Consider the following statement:
 1. The SCOOB-I is the first satellite in the Student Satellite Series (S3-I)
 2. ISRO is attempting a new experiment with the four-stage rocket to perform PSLV Orbital Experimental Module (POEM) activity
 Choose the correct option from the codes given below:

| | |
|------------|----------------------|
| a) 1 Only | b) 2 Only |
| c) 1 and 2 | d) None of the above |

4. Consider the following statement regarding 'Prime Minister's Employment Generation Programme' (PMEGP):
 1. Project cost of manufacturing sectors increased to 50 lakhs.
 2. Transgender category to avail subsidy is removed from this category.
 Choose the correct option from the codes given below:

| | |
|------------|----------------------|
| a) 1 Only | b) 2 Only |
| c) 1 and 2 | d) None of the above |

5. Consider the following statement regarding recently conducted test flight of a new Unmanned Aerial Vehicle (UAV).
 1. A small turbofan engine powers it.
 2. French engine is used in this UAV.
 Choose the correct option from the codes given below:

| | |
|------------|----------------------|
| a) 1 Only | b) 2 Only |
| c) 1 and 2 | d) None of the above |

6. Recently the Appointments Committee of the Cabinet approved Financial Services Institutions Bureau (FSIB) in place of the Banks Board Bureau (BBB). Consider the following statement:
 1. Appointments Committee of the Cabinet has approved the appointment of Deepak Singhal as the Chairperson of FSIB
 2. Chairperson of FSIB is initially for a term of two years.
 3. Guidelines for selection of general managers and directors of public sector general insurance companies have been made part of FSIB.
 Choose the correct option from the codes given below:

| | |
|------------|---------------|
| a) 1 and 2 | b) 2 and 3 |
| c) 1 and 3 | d) 1, 2 and 3 |

7. Consider the following statement:
 1. FINA introduced the new "open" category in elite swimming.
 2. FINA is the international federation recognised by the International Olympic Committee (IOC) for administering international competitions in water sports
 Choose the correct option from the codes given below:

| | |
|------------|----------------------|
| a) 1 Only | b) 2 Only |
| c) 1 and 2 | d) None of the above |

8. Consider the following statements:
 1. Floating Solar Project at Ramagundam.
 2. Floating Solar at Kayamkulam
 3. Floating Solar at Simhadri
 Which among the following solar project are commercialised by NTPC?

| | |
|------------|---------------|
| a) 1 and 2 | b) 2 and 3 |
| c) 1 and 3 | d) 1, 2 and 3 |

- Choose the incorrect option from the codes given below:
- a) 1, 2 and 3 b) 2 and 3
c) 1 and 3 d) 1 Only
19. Consider the following statement regarding National Investigation Agency (NIA):
1. It is a central agency mandated to investigate all the offences affecting the sovereignty, security and integrity of India.
 2. It investigate terror acts and their possible links with crimes like smuggling of arms, drugs and fake Indian currency and infiltration from across the borders.
- Choose the correct option from the codes given below:
- a) 1 Only b) 2 Only
c) 1 and 2 d) None of the above
20. Consider the following statement regarding Alluri Sitharama Raju:
1. He had led the Rampa rebellion.
 2. He was also named as 'Manyam Veerudu' or Hero of Jungle.
 3. The Rampa Rebellion coincided with Mahatma Gandhi's Civil Disobedience Movement.
- Choose the correct option from the codes given below:
- a) 1 and 2 b) 2 and 3
c) 1 and 3 d) 1, 2 and 3
21. Consider the following statement regarding POSHAN Abhiyan 2.0:
1. Ministry of Health & Family Welfare is the nodal Ministry for this programme.
 2. National Nutrition Mission (NNM), rebranding it the Prime Minister's Overarching Scheme for Holistic Nutrition, or POSHAN Abhiyaan.
 3. It places a special emphasis on selected high impact essential nutrition interventions.
- Choose the correct option from the codes given below:
- a) 1 and 2 b) 2 and 3
c) 1 and 3 d) 1, 2 and 3
22. Consider the following statement regarding the challenges of e-Waste rule:
1. Large-scale recycling of e-waste is still in its infancy in India.
 2. The existing formal and informal players have to play a crucial role in recycling.
- Choose the correct option from the codes given below:
- a) 1 Only b) 2 Only
c) 1 and 2 d) None of the above
23. Recently, Veteran filmmaker Tarun Majumdar passed away. Consider the following statement:
1. He was awarded with four National award.
 2. He was awarded with Padma Shri.
 3. He was awarded Dadasaheb Phalke Award.
- Choose the correct option from the codes given below:
- a) 1 and 2 b) 2 and 3
c) 1 and 3 d) 1, 2 and 3
24. Consider the following statement:
1. Evian Accords in March 1962 gave independence to Algeria.
 2. Algeria celebrates 60 years of its independence from Germany.
- Choose the correct option from the codes given below:
- a) 1 Only b) 2 Only
c) 1 and 2 d) None of the above
25. Consider the following statement regarding the key recommendation of Parliamentary Panel:
1. There should be a dedicated hour during the Rajya Sabha proceedings.
 2. The tenure of the Parliamentary committees should be increased from the present one year to two years.
 3. Their field visits should not be increased from the present two visits.
- Choose the correct option from the codes given below:
- a) 1 and 2 b) 2 and 3
c) 1 and 3 d) 1, 2 and 3
26. Consider the following statement regarding Nairobi Flies:
1. This flies infected student of Manipur.
 2. This flies is also known as dragon bugs.
 3. These flies secrete pederin, a type of acid that cause burn.
- Choose the correct option from the codes given below:
- a) 1 and 2 b) 2 and 3
c) 1 and 3 d) 1, 2 and 3
27. Consider the following statement regarding the recently released the first State Ranking Index for implementation of the National Food Security Act, 2013:
1. Odisha, Uttar Pradesh and Andhra Pradesh scored the top three positions in the Index.
 2. This index is based on three parameters for the year 2022.
- Choose the correct option from the codes given below:
- a) 1 Only b) 2 Only
c) 1 and 2 d) None of the above
28. Consider the following statement regarding India-China competition in Sri Lanka.
1. In Sri Lanka. India and Japan jointly developing the East Container Terminal at the Colombo.
 2. In March 2022, Sri Lanka picked India to build three hydropower projects.
- Choose the correct option from the codes given below:

3. UNICEF, World Food Programme (WFP)
4. World Health Organisation (WHO)
Choose the correct option from the codes given below:
- a) 1, 2, 3 and 4 b) 1, 2, and 3
c) 2, 3, and 4 d) 1 and 2
39. A recent released report by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) states that sustainable use of wild species can meet needs of billions. Consider the following statement:
1. It presented effective regulations without which the unsustainable use and trade would increase.
 2. It also cited illegal use and illegal trade in wild species.
 3. About 66 per cent of marine wild fish stocks are overfished
- Choose the correct option from the codes given below:
- a) 1 and 2 b) 2 and 3
c) 1 and 3 d) 1, 2 and 3
40. India celebrates Van Mahotsav or the Forest Festival in the first week of July every year. Consider the following statement:
1. The total area occupied by primary forests in India has increased by 3.6%.
 2. According to IUCN, deforestation and forest degradation contribute around 12% of global greenhouse gas emissions.
 3. Annually, forests absorb roughly 2.6 billion tonnes of carbon dioxide.
- Choose the correct option from the codes given below:
- a) 1 and 2 b) 2 and 3
c) 1 and 3 d) 1, 2 and 3
41. Consider the following statement:
1. A cancer driver gene is one whose mutations increase the net cell growth in body beyond normal.
 2. TSGs regulate the cell during replication and division.
 3. Oncogenes are those that can cause cancer when activated.
- Choose the correct option from the codes given below:
- a) 1 and 2 b) 2 and 3
c) 1 and 3 d) 1, 2 and 3
42. Consider the following statement:
1. According to IPCC, agricultural activities account for around a fifth of the greenhouse gases emitted.
 2. World Food Programme created the concept of Climate Smart Agriculture (CSA).
- Choose the correct option from the codes given below:
- a) 1 Only b) 2 Only
c) 1 and 2 d) None of the above
43. Consider the following statement:
1. Singalila National Park is in West Bengal.
 2. Singalila National Park has started an ambitious programme to augment red panda.
 3. India is home to Himalayan red panda only.
- Choose the correct option from the codes given below:
- a) 1 and 2 b) 2 and 3
c) 1 and 3 d) 1, 2 and 3
44. Consider the following statement:
1. Padmaja Naidu Himalayan Zoological Park is located in Assam.
 2. Neora Valley National Parks is in West Bengal.
 3. Red Pandas are characterised as an endangered species as per IUCN Red List of Threatened Species.
- Choose the correct option from the codes given below:
- a) 1 and 2 b) 2 and 3
c) 1 and 3 d) 1, 2 and 3
45. The ICMR-Vector Control Research Centre (VCRC), Puducherry, has filed patent applications for its unique products; an artificial diet and feeding device for mosquitoes. Consider the following statement regarding Artificial Mosquito diet:
1. Female mosquito requires animal or human blood diet to produce eggs.
 2. The four diets prepared for female mosquitoes is like a baby formula food.
- Choose the correct option from the codes given below:
- a) 1 Only b) 2 Only
c) 1 and 2 d) None of the above
46. Recently landslides has killed at least 125 people across four north-eastern States in 2022 after the onset of rainfall in April. Consider the following statement:
1. The Railways have reportedly blamed Jhum or shifting cultivation for this tragedy.
 2. Jiribam- Imphal line connect Assam with Manipur.
 3. Jiribam- Imphal line is a broad-gauge project.
- Choose the correct option from the codes given below:
- a) 1 and 2 b) 2 and 3
c) 1 and 3 d) 1, 2 and 3
47. The decadal pace at which glaciers are receding in Ladakh's Drass region, indicates a grave threat to Himalayan glaciers. Consider the following statement:
1. Black carbon concentration is one of the cause for glacier receding.
 2. The glaciers at lower elevations had receded maximum glacier.
- Choose the correct option from the codes given below:

- a) 1 Only b) 2 Only
c) 1 and 2 d) None of the above
113. Consider the following statement:
1. Union Agriculture and Farmers Welfare Ministry formed Sanjay Agrawal.
2. The aim of the committee is to make MSP more effective and transparent.
Choose the correct option from the codes given below:
a) 1 Only b) 2 Only
c) 1 and 2 d) None of the above
114. Consider the following statement regarding Barak Bhuban Wildlife Sanctuary:
1. It is in Assam.
2. It spread between Barak River and the Sonai River.
3. It is also an important habitat for king cobra.
Choose the correct option from the codes given below:
a) 1 and 2 b) 2 and 3
c) 1 and 3 d) 1, 2 and 3
115. Consider the following statement regarding Monkeypox:
1. WHO has declared the global monkeypox outbreak a PHEIC, one step below that of a 'pandemic'.
2. The virus is transmitted from infected animals to humans
3. The majority of the cases occurs among women.
Choose the correct option from the codes given below:
a) 1 and 2 b) 2 and 3
c) 1 and 3 d) 1, 2 and 3
116. Consider the following statement regarding Development of Enterprise and Service Hubs (DESH) Bill:
1. The bill overhaul the existing Special Economic Zone law of 2005.
2. SEZs will be revamped and renamed Development Hubs.
3. The new law will allow units to produce only domestic markets.
Choose the correct option from the codes given below:
a) 1 and 2 b) 2 and 3
c) 1 and 3 d) 1, 2 and 3
117. Consider the following statement regarding the shortcoming of SEZ act:
1. According to WTO, India's export related scheme was consistent with WTO rules.
2. SEZ Act was implemented to create export hubs and boost manufacturing in the country.
3. India's export-related schemes prohibited subsidies under the Agreement on Subsidies and Countervailing Measures.
Choose the correct option from the codes given below:
- a) 1 and 2 b) 2 and 3
c) 1 and 3 d) 1, 2 and 3
- a) 1 and 2 b) 2 and 3
c) 1 and 3 d) 1, 2 and 3
118. Consider the following statement regarding National Sports Development Code of India:
1. It was introduced in 2011.
2. It aimed at good governance practices in the management of sports at the national level without interfering in the autonomy of the national sports bodies.
Choose the correct option from the codes given below:
a) 1 Only b) 2 Only
c) 1 and 2 d) None of the above
119. Consider the following statement:
1. The Arctic is warming three to four times faster than the globe.
2. Warmer oceans contribute to heat domes.
3. The main cause of heat domes is a strong change in ocean temperatures from west to east in the tropical Pacific Ocean.
Choose the correct option from the codes given below:
a) 1 and 2 b) 2 and 3
c) 1 and 3 d) 1, 2 and 3
120. Recent the Zoological Survey of India released a study about the pattern of snow leopard and its prey species in the fragile ecosystem of Spiti Valley, Himachal Pradesh. Consider the following statement:
1. The study reveal a strong link between habitat use by Snow Leopard and its prey species Siberian ibex and blue sheep.
2. Snow Leopard is classified as Critically Endangered by IUCN Red list.
Choose the correct option from the codes given below:
a) 1 Only b) 2 Only
c) 1 and 2 d) None of the above
121. India commemorated 23 years of its victory over Pakistan in the Kargil War. Consider the following statement:
1. Intruders from Pakistan overlooked the NH 1A in the Drass and Batalik Sectors of Kargil in the Ladakh region.
2. The direct-firing weapon was used for the first time by artillery.
3. Operation Gibraltar is associated with Kargil War.
Choose the correct option from the codes given below:
a) 1 and 2 b) 2 and 3
c) 1 and 3 d) 1, 2 and 3
122. The Centre plans to repeal the existing Coffee Act and has proposed a new "Coffee (Promotion and Development Bill), 2022" to promote development of the Indian coffee industry. Consider the following statement:

PRACTICE QUESTION FOR UPSC MAINS EXAM

1. 'India is progressively moving towards a superior tax regime which can also be deduced by the fact that many global economies are borrowing our jurisprudence and examining our GST model'. Comment.
2. The news of supply chain disruptions, resource shortages and inflation are getting common these days. Discuss how by digitising the supply chain and automating operations, businesses can identify vulnerabilities in advance and ensure that safeguards are in place to avert a domino effect.
3. 'There is a need for preparing better and healthier entertainment for children in the form of films and TV programmes, linking these to the challenges of present times'. Comment.
4. Given the problem of custodial deaths, technology has been proposed as a silver bullet by many. Do you think it can be an alternative for compassionate policing established on trust between the police and the citizens? Support your answer with valid reasons.
5. How does orbital crowding, space debris work against the sustainability of outer space? What is the U.K.'s Astro Carta model?
6. 'The Supreme Court's directives on handcuffing must be observed, but issues that affect police reform cannot be ignored'. Elaborate.
7. Elaborate how can India, that has hitherto managed a careful balancing act between all the groupings, build a movement out of this moment of deep polarisation in the world?
8. 'The mental illnesses and challenges that India's LGBTQIA++ people face need comprehensive and long-term solutions'. Elaborate.
9. Do you think with co-operation of private sector in Climate-Smart Sustainable Agriculture programmes can bring about much-needed change in farming and make sustainability a nation-wide norm? If yes, support your answer with suitable examples.
10. Discuss the legacy of late Former Japanese Prime Minister Shinzo Abe on both domestic and international fronts. Also, discuss his role in shaping and strengthening India-Japan ties.
11. 'The interests of law enforcement trump the little worth that the right to privacy is supposed to have'. Discuss the above statement in the light of recent arrest and custodial detention of Alt News co-founder.
12. As per latest UN estimates, India will become the most populous country in 2023. Discuss how it is a double-edged sword that needs to be skillfully wielded. What do population transformations around the globe and within India herald for challenges facing Indian public policy?
13. Recently, the Supreme Court recommended that the Union government frame a new law to facilitate the grant of bail to ward off unnecessary arrests. Discuss how the redressal may eventually lie in changing the mindset of the investigating agencies and the judges of the trial courts.
14. Recently, the draft of the National Policy for Persons with Disabilities was released by Department of Empowerment of Person with Disabilities (DoEPwD) with goal of inclusiveness and empowerment of persons with disabilities. Discuss how political rights/political participation of disabled is imperative for the success of this goal?
15. 'Early Childhood Care and Education (ECCE) is an indispensable foundation for lifelong development and learning, and is a national duty that we must all embrace'. Elaborate.
16. 'From the perspective of decarbonising India's transport sector, focussed initiatives to energise the rail freight business and to bring in infrastructural and institutional changes is necessary'. Comment
17. 'I2U2 is an ideal example of how 'minilaterals' can reshape West Asia's geopolitical landscape, enabling India to establish both economic relations and long-term security cooperation through a comprehensive engagement strategy'. Elaborate.
18. 'Agnipath will help train the youth in key skills required by the job market, even as it serves a strategic end by freeing up resources for modernisation of the armed forces within the existing budget constraints'. Comment.
19. Discuss how Smartphones and technological innovations are shaping the agriculture sector in India.
20. As India and Vietnam are celebrating the 50th anniversary of their diplomatic relations. Highlight the strategic dimensions of Indo-Vietnamese relations. Also discuss Vietnam's importance in India's political and security engagements in the Indo-Pacific region.
21. India promised to be supportive of Sri Lanka, which is struggling to deal with the devastation caused by the economic crisis. In such a scenario, what must the world and India in particular, do to help Sri Lanka?
22. Parliament is not merely a legislative body but also a deliberative one which enables the members to debate major issues of public importance. And with the Indian polity becoming increasingly complex, analyse the role of the role of Rajya Sabha.
23. Most Indians, cutting across religions, regard respect for all religions as central to what India is as a nation but with a marked preference for religious segregation. In this scenario, justify the need for a Ministry of Religious affairs in India.

24. Why are optical fibre cables necessary for accessing 5G technology? What are the challenges of fiberisation ahead of India's 5G deployment?
25. 'The private participation will help give the Indian space sector the boost and pace it needs to match up to other mature space agencies like NASA'. Elaborate.
26. Recently, Shanghai unveiled 'Shanghai Plan', an integral part of its five-year economic recovery plan relying on Web3, metaverse, and Non-Fungible Tokens (NFTs). Give a brief note on 'Shanghai Plan'. Discuss some proactive steps to unlock India's potential for becoming a hub for such technologies.
27. What led to the political turmoil in Tunisia? Why did President Kais Saied bring in the new Constitution and what are its prominent features?
28. 'The concerns of the founding fathers of Indian Constitution of addressing socio-economic inequities are being forgotten in today's fiscal policy'. Discuss the above statement stating various challenges and issues of India's fiscal federalism in current times.
29. Right to Information (RTI) Act, 2005 is a shining example of a participatory democracy in India but the increasing attacks on users of the law suggest need for Whistle Blowers Protection Act and a solid regulatory regime to safeguard whistleblowers to keep democracy alive.
30. Trafficking is gross commercialisation of innocent human life, violating human rights and dignity. The cases of human trafficking along India and Bangladesh border are mostly in news. Discuss the push and pull factors responsible, challenges and way out to strengthen cross-border mechanisms to combat human trafficking.



68th BPSC PRE+MAINS



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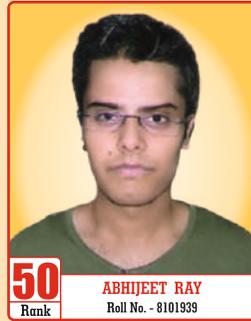
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