

CURRENT AFFAIRS

WEEKLY

WEEK: 5

NOVEMBER
2021

MAINS

GS-I

- Australia declares a La Niña in the tropical Pacific

GS-II

- China is acquiring foreign military bases
- Pakistan Passes Bill To Give Kulbhushan Jadhav 'Right to Appeal' As Per ICJ Decision
- Russia-Ukraine Border Conflict: Causes and Implications
- Allahabad High Court's views on Uniform Civil Code
- Error Corrected on Interpreting POCSO Act
- The decentralisation charade of urban local bodies

GS-III

- Bharat Gaurav Scheme to promote Tourism
- RBI Cautions Co-operative Societies Against Using Term "Bank", understanding India's 'BANKING' structure
- The State of Food and Agriculture 2021
- The panoptic nature of biometric technology
- Personal Data Protection Bill, 2019: Assessing the role of data and the need of its protection
- Russia and China in the race of hypersonic technologies, where does India stand?
- From "phase-up" to "phase-down" of coal

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- Global Agreement on Ethics of Artificial Intelligence

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- NITI AAYOG LAUNCHES SDG URBAN INDEX & DASHBOARD 2021-22
- ONE DAY NATIONAL CONFERENCE ON PESA ACT, 1996 TO CELEBRATE 25TH YEARS OF THE ACT
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- SCIENTISTS CONFIRMS FASTEST SPINNING WHITE DWARF CONFIRMED

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— Disclaimer —

The current affairs articles are segregated from prelims and mains perspective, such separation is maintained in terms of structure of articles. Mains articles have more focus on analysis and prelims articles have more focus on facts.

However, this doesn't mean that Mains articles don't cover facts and PT articles can't have analysis. You are suggested to read all of them for all stages of examination.

CURRENT AFFAIRS ANALYST

WEEK- 5 (NOVEMBER, 2021)

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SECTION: A

(MAINS)

CURRENT AFFAIRS

AUSTRALIA DECLARES A LA NIÑA IN THE TROPICAL PACIFIC

CONTEXT:

Australia's weather bureau declared that the weather phenomenon known as La Nina had developed for the second consecutive year in the Pacific Ocean.

ANALYSIS

What is La Niña?

- La Niña is described as one of the three phases of the weather occurrence known as the El Niño-Southern Oscillation (ENSO).
- This includes the warm phase called El Niño, the cooler La Niña and a neutral phase.
- La Niña develops in the tropical Pacific when strong winds blow the warm surface waters of the Pacific away from South America and towards Indonesia.
- During a La Niña event, the sea surface in the central Pacific is cooler than average, and the water closer to Australia warmer than usual.
- The warm temperatures in the west Pacific and cool in the east intensify the trade winds which blow from South America to Indonesia.

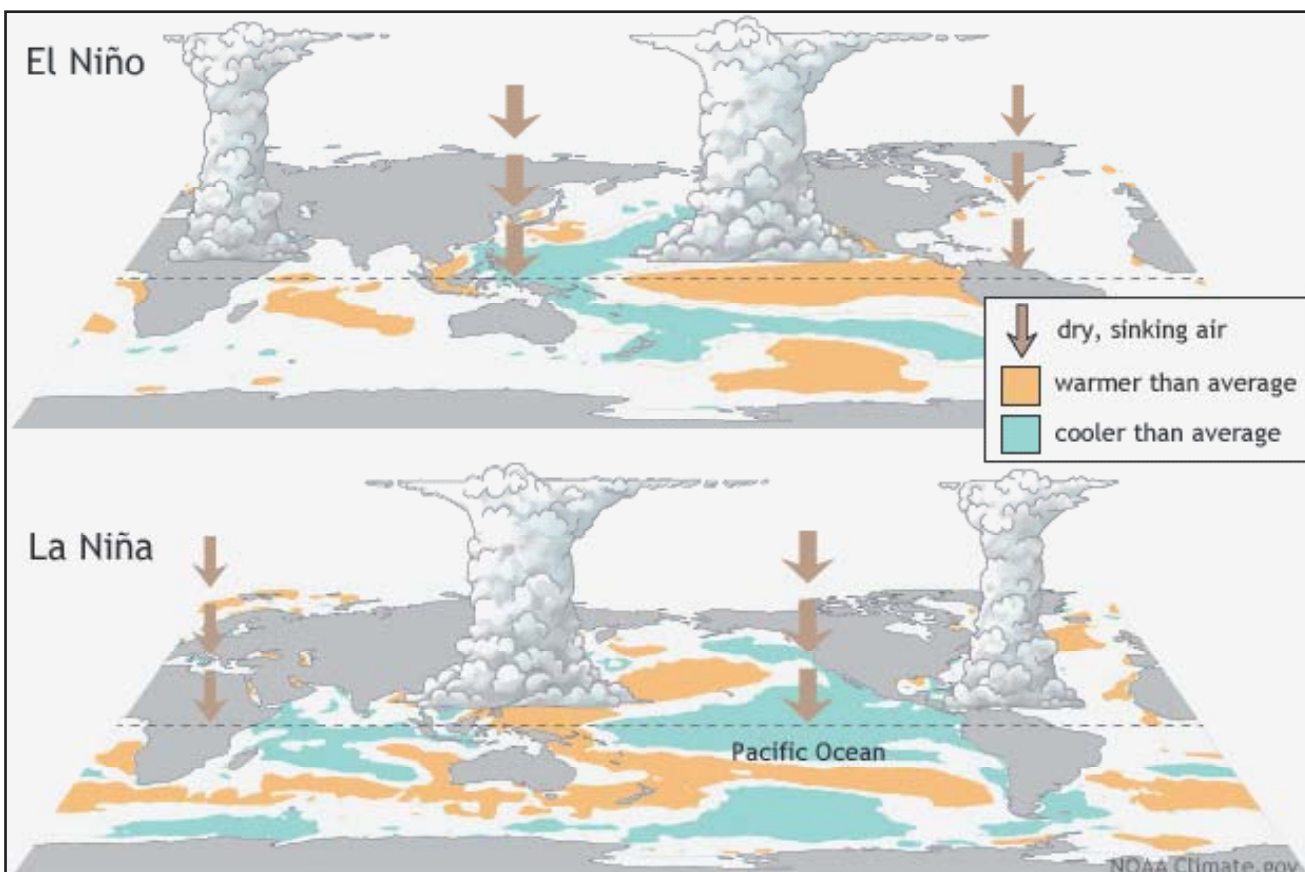
- These equatorial winds pile up warm water towards Australia, allowing cool water to upwell from the subsurface in the eastern Pacific.

El Niño

- The opposite generally occurs for **El Niño**, the warm phase of ENSO. The tropical Pacific swings from La Niña to El Niño in a cycle that happens every 3 to 7 years.
- Typically, La Niña and El Niño develop during the Southern Hemisphere spring, mature at the end of the year in summer, and decay away in autumn.

How would it impact?

- Global effects: The effects of La Nina are almost global. The Pacific Ocean is roughly 32% of the surface area of the globe, more than all



landmasses combined. It touches every continent but Europe and Africa. So, worldwide effects are to be expected.

- More rainfall: La Nina is likely to bring above average rainfall across much of Australia's north, east and center.
- Boost in wheat yields: It is also likely to boost the country's wheat yields as well as potentially lead into a less severe bushfire season owing to extra rainfall.
- Cooler temperature: La Nina also increases the chance of cooler than average daytime temperatures for large parts of Australia.
- More tropical cyclones: It can increase the number of tropical cyclones that form.

◎ CONCLUSION

- La Nina conditions will be brief, lasting only a few months while peaking around the first of the new year and then generally falling back into a neutral state in Northern Hemisphere spring, or Southern Hemisphere fall.
- Every La Nina has different impacts, as it is not the only climate driver to affect Australia at any one time. Due to greenhouse warming, the world is likely to see more often appearances of strong La Niña events and potentially increased rainfall in the future.

CHINA IS ACQUIRING FOREIGN MILITARY BASES

CONTEXT:

Report of China's growing interest in acquiring foreign military bases has been in spotlight now as the United States is prevailing on the United Arab Emirates to stop China from secretly constructing a military facility at an Abu Dhabi port should not come as a surprise.

◎ BACKGROUND

- For much of China's history post the establishment of CCP rule in 1949, its leaders eschewed the establishment of military bases on foreign soil.
- Even in the boom years of Chinese growth in the 1990s and 2000s, China's military and political elite pursued defence modernisation while making clear that "military expansion" in the form of foreign bases was off the table.

◎ ANALYSIS

What are the reasons behind China's shift?

- **Increasing economic influence**
 - ▶ China's main asset is its economic levers of influence, and Chinese actors are proactive in wielding these.
 - ▶ Thus, China is helping to construct mega infrastructure projects in every country in the region.
- **Stabilizing oil dependency**
 - ▶ China's breakneck economic growth necessitated the consumption of large quantities of fuel.
 - ▶ While China was largely able to meet its energy needs through domestic supplies in the early years of its economic boom, it became an energy importer after 1993.
 - ▶ Since then, China has become the world's largest importer of crude oil and meets around 67 per cent of its oil imports from abroad.
 - ▶ To policymakers in Beijing, US domination of strategically vital sea lanes in the Middle

East, especially near the **Straits of Hormuz** through which much of China's oil imports travel, represents a strategically dangerous dependence for China that is only likely to get worse over time.

- **Expanded economic and human capital investment**

- ▶ China's expanded economic and human capital investments in often unstable regions of the world require an enhanced military presence.
- ▶ China discovered this to its cost in 2011 when it had to scramble to evacuate its citizens from war-torn Libya.
- ▶ That it was able to do so was largely thanks to the effort of non-military vessels that assisted in the evacuation effort.

How would it impact?

- China's fast-expanding military presence is designed to fortify substantial political and economic influence.
- This phenomenon, fast on the rise, is already undermining the US presence and greatly influencing political institutions and strategy across a wide array of US-allied African nations

Wrapping Up

- Beijing's investments in infrastructure would provide China a foothold in important areas of the world. Also, such deployment could be a game changer as it will cement Chinese influence into regional structures to the extent that it will be almost impossible to stop or remove. While Chinese engagement looks largely economic, it could turn political quickly. Thus, an effective cooperation among countries is required.

PAKISTAN PASSES BILL TO GIVE KULBHUSHAN JADHAV 'RIGHT TO APPEAL' AS PER ICJ DECISION

CONTEXT:

Pakistan granted India's Kulbhushan Jadhav the 'right to appeal' as per the decision of the International Court of Justice after passing a Bill in a joint sitting at the Pak Parliament. However, India is not convinced with Pakistan's new law.

◎ BACKGROUND

- Kulbhushan Jadhav, a retired Indian Navy officer, was sentenced to death by a Pakistani military court in April 2017 on charges of espionage.
- In 2019 the International Court of Justice (ICJ) said Pakistan was under an obligation to provide, by means of its own choosing, effective review and reconsideration of the conviction and sentence of Mr Jadhav.
- The ICJ had ruled that Pakistan was in breach of its **international obligations** because of the failure to provide consular access to Mr Jadhav.
- In June, 2021, the Pakistan National Assembly adopted a bill to give Mr Jadhav right of appeal.
- The Bill is now passed in a joint sitting of Pak's Parliament, the law seeks to provide further right of review and reconsideration in giving effect to the judgment of the ICJ.
- However, India is not satisfied and had asked Pakistan to address certain concerns, including an option to reconsider, as mandated by the ICJ.

◎ ANALYSIS

What are the issues raised by India?

- India accused Pakistan of denying unimpeded and unhindered consular access to Indian death row prisoner Kulbhushan Jadhav.
- It also claims that the new Pakistani law to facilitate Mr Jadhav's right to appeal his death sentence contains shortcomings.
- **Burden of legal requirements:** The new law will not make a material difference to Jadhav's case and it was more about meeting legal requirements so that he can mount a proper appeal in Pakistani courts.
- **No machinery to facilitate effective review:** It does not create a machinery to facilitate an effective review and reconsideration of Jadhav's case.

- **Allowing participation of municipal courts:** It invites municipal courts in Pakistan to decide whether or not any prejudice has been caused to Shri Jadhav on account of the failure to provide consular access. This is clearly a breach of the basic tenet, that municipal courts cannot be the arbiter of whether a State has fulfilled its obligations under international law.
- It further invites a municipal court to sit in appeal, as it were, over a judgment of the ICJ.
- India has repeatedly called on Pakistan to abide by the letter and spirit of the ICJ judgement. However, the latter has failed all the time.

About International Court of Justice (ICJ)

- The International Court of Justice (ICJ) is the principal judicial organ of the United Nations (UN).
- The ICJ was established in 1945 by the San Francisco Conference, which also created the UN.
- All members of the UN are parties to the statute of the ICJ, and non-members may also become parties.
- The court's inaugural sitting was in 1946.

Permanent Court of International Justice

- ICJ was not the first effort at instituting a multilateral forum to settle international disputes between states.
- The ICJ's precursor was the **Permanent Court of International Justice**, which fell into irrelevance owing to the inability to enforce its mandate, especially during the intervening war years.

Composition of the International Court

- The ICJ is a continuing and autonomous body that is permanently in session.
- It consists of 15 judges — no two of whom may be nationals of the same state — who are elected to nine-year terms by majority votes in the UN General Assembly and the Security Council.

- The judges, one-third of whom are elected every three years, are eligible for re-election.
 - The judges elect their own president and vice-president, each of whom serves a three-year term, and can appoint administrative personnel as necessary.
 - The seat of the ICJ is at The Hague, Netherlands, but sessions may be held elsewhere when the court considers it desirable to do so.
 - The official languages of the court are French and English.
- How a dispute is resolved in the court?**
- Cases before the ICJ are resolved in three ways —
 - parties can settle the dispute at any time during the proceedings
 - a state can discontinue the proceedings and withdraw at any point
 - the court can give a verdict
 - The ICJ decides disputes in accordance with international law as reflected in international conventions, international custom, general principles of law recognised by civilised nations, judicial decisions, and writings of the most highly qualified experts on international law.

RUSSIA-UKRAINE BORDER CONFLICT: CAUSES AND IMPLICATIONS

CONTEXT:

Recently, the massive mobilisation of Russian troops on the Ukraine border and occasional outbreak of violence along the line of contact between the Russia-backed rebels in the contested Donbass region and Ukrainian troops have pushed both countries to the brink of an open conflict.

◎ BACKGROUND

- The Ukrainian Crisis refers to the series of events such as the Euromaidan and the Ukrainian Revolution in 2014 that ultimately led to a confrontation between Ukraine and Russia.
- The escalation of conflict continues to this day and reached a boiling point when Russian forces carried out a military exercise in the Azov Sea in April 2021, with a mass number of troops massing at the Russian-Ukrainian border.
- Although the troops were subsequently withdrawn, tensions between the two nations continue to this day.

◎ ANALYSIS

What is the issue?

- The recent stand-off between Russia and Ukraine has again captured headlines in the international news media.
- The current geopolitical situation appears to be complex due to the indirect involvement of multiple stakeholders, including the US, Turkey and the NATO.

What is the origin of Ukrainian crisis?

- The Ukrainian crisis is a power struggle between the various political factions in the Ukraine.
- Chief among these factions are the ones who seek to cultivate closer ties with the European Union while the other seeks better relations with Russia.
- Ukraine was one of the founding states of the Soviet Union, its farmlands contributing immensely to the Union's economic output from 1920 to 1991.
- The crisis reached a boiling point when on November 21, 2013, Victor Yanukovich, the Ukrainian President, suspended an agreement with the European Union. It led to a series of protests from those who supported the agreement with the European Union.
- This in turn led to a series of unrest in the eastern and southern regions of Ukraine, whose denizens

were more supportive of Yanukovich and his pro-Russian policies.

- Soon a political crisis plunged Ukraine into chaos, with the Pro-European Union and Pro-Russian factions fighting it out against each other for control of Ukraine.
- It was against this backdrop that Russia sent its army to annex the Crimean region of Ukraine in March 2014. Russia's casus belli (an act or situation that provokes or justifies a war) was that it was protecting its port access on the Black Sea in case the political crisis in Ukraine caused disruption in its trade in the region.
- Russia's invasion further bolstered the pro-Russian forces in Ukraine, turning the simmering unrest into a full-blown war against the post-revolutionary Ukrainian government.
- Between 2014–2020, the military conflict between Ukrainian soldiers and Russian-backed separatists continued in eastern Ukraine. More than 10,000 people were killed.

Why Russia invaded Ukraine?

- To understand the reason for the Russian invasion of Ukraine, it is crucial to look back to the time of the Cold War.
- During the reign of Josef Stalin, the Soviet Union sent ethnic Russians to the eastern portion of Ukraine. This was to solidify Soviet control in Ukraine and seriously undermine any prospects of an indigenous freedom movement if they ever took place.
- As a consequence, Russia's President got the reason he needed to send his army to the Ukraine, because he was sure he would find support for his actions in the country. The pro-Russian faction was bolstered by this incursion, which also allowed Yanukovich to return to Kiev.
- Ukraine's desire to open its markets to the EU and to collude with U.S. companies to develop its natural gas reserves were perceived by Russia as huge threats to its economy.
- Since then, relations between the United States and Russia have continued to deteriorate with

the ongoing Ukraine conflict. Efforts to reach a diplomatic settlement have failed.

- The conflict is still ongoing with regular clashes between the two Ukrainian factions as well as Russian armed forces.

What are the current tensions?

- Increased tensions between Ukraine and Russia can be viewed as a continuation of the unresolved conflict of 2014.
- Since then, the 'illegal annexation of Crimea' has been an issue.
- Russia has been criticised for its involvement in the Donetsk and Luhansk regions in eastern Ukraine.
- There, Russian-backed separatists have been fighting with Ukrainian troops.
- Recently, Moscow has allegedly deployed thousands of troops as well as tanks and artillery near Ukraine's eastern border.
- It has also mobilised troops in the annexed Black Sea region of Crimea.
- This has sent shock waves in Ukraine, forcing it to appeal to the U.S. and NATO for an intervention, if needed.

What are the effects of Ukrainian Crisis?

- The events in Ukraine had both domestic and international consequences. As per the estimate by the World Bank in October 2014, the economy of Ukraine contracted by 8% the same year.
- In turn, a slew of sanctions imposed by the United States and the EU crippled the Russian Rouble, resulting in the Russian financial crisis.
- The war in the region had caused a shortage in coal for Ukrainian power stations, leading to blackouts in many parts of the country in December 2014.
- Before the Euromaidan protest and the subsequent crisis, corruption had plagued the Ukrainian government from time to time. Post-revolution, however, the pace of reforms are slow.
- Internationally, the relations between the United States and Russia have continued on a downward spiral ever since the beginning of the crisis.
- Geopolitical experts believe that the ever-increasing rivalry between the two nations is the foundation of a new Cold War.
- Recently, the 2020 Ukrainian local elections took place on Sunday 25 October 2020. In the election deputies of oblast and municipality councils were elected and elections for city and town mayors were held.
- However, no elections were held in the currently occupied territories of Ukraine.

Why is the current conflict more aggressive than the earlier ones?

- There were similar scenes earlier this year but after U.S. diplomatic intervention, Moscow pulled back.
- This time, the Russian moves appear to be part of a larger strategy of force-projection across Russia's western perimeter, from the Baltic Sea to the Black Sea.
- Russia views Ukraine as a Western aircraft carrier parked just across southern Russia because of the U.S. influence on Ukraine.
- Russia's aggressiveness could have partly been driven by the assessment that the U.S. has strategically weakened after its Afghan withdrawal and its preoccupation with China's rise.
- Ukraine says an estimated 90,000 Russian troops have massed near the border which could be a prelude to another Russian invasion.

Minsk Agreements

- The Minsk Protocol (Minsk-1) with the Minsk Memorandum was signed in 2014 to prevent war in the eastern Ukrainian region of Donbas.
- The representatives of the Trilateral Contact Group on Ukraine (TCG – Russia, Ukraine, and the OSCE) and the representatives of Donetsk and Luhansk People's Republics (DNR, LNR) signed the agreement.
- The Protocol was followed by an additional Memorandum, which detailed the conditions of a ceasefire.
- The agreement failed to stop fighting, however, it significantly reduced fighting in the conflict zone for months.
- The Minsk-2 (Package of measures for the Implementation of the Minsk agreements) was signed in 2015 under the mediation of France and Germany to prevent an open conflict.
- It was designed to end the fighting in the rebel regions and hand over the border to Ukraine's national troops.
- Ukraine was required to delegate more power to the breakaway regions and introduce constitutional reforms, codifying their special status.

What is Russia's possible rationale?

- From the Russian perspective, the current 'military build-up' can be viewed as another round of display of a powerful and capable Russia.

- Russian President Vladimir Putin possesses enough diplomatic (and pragmatic) skills not to indulge in yet another geopolitical endeavour.
- Thus, this might entail serious repercussions from the international community.

◎ WAY FORWARD

- Both countries do need support from the global community, but not in a military form.

- The only way forward is to seek a peaceful resolution to the Russia-Ukraine conflict. All the stakeholders in the ongoing crisis should focus on establishing a constructive dialogue among themselves.
- There is thus a need for a platform (similarly to the Minsk Agreements). This should facilitate negotiation, mutual consensus and possible compromises, as well as engagement with mediators.

ALLAHABAD HIGH COURT'S VIEWS ON UNIFORM CIVIL CODE

CONTEXT:

Responding to as many as 17 petitions related to interfaith marriages, the Allahabad High Court has asked the Central government to consider setting up a panel for implementing the mandate of Article 44, which says that the “state shall endeavour to secure for the citizens a Uniform Civil Code (UCC) throughout the territory of India”.

◎ BACKGROUND

- The origin of the UCC dates back to colonial India.
- During that period, the British government submitted its report in 1835 stressing the need for uniformity in the codification of Indian law relating to crimes, evidence, and contracts.
- It specifically recommending that personal laws of Hindus and Muslims be kept outside such codification.
- Increase in legislations dealing with personal issues in the far end of the British rule forced the government to form the **B N Rau Committee** to codify Hindu law in 1941.
- The task of the **Hindu Law Committee** was to examine the question of the necessity of common Hindu laws.
- The committee, in accordance with scriptures, recommended a codified Hindu law, which would give equal rights to women.
- The **1937 Act** was reviewed and the committee recommended a civil code of marriage and succession for Hindus.

◎ ANALYSIS

• What is UCC?

- The Uniform Civil Code (UCC) calls for the formulation of one law for India, which would be applicable to all religious communities in matters such as **marriage, divorce, inheritance, adoption**.
- The code comes under **Article 44** of the Constitution, which lays down that the state shall endeavour to secure a Uniform Civil Code for the citizens throughout the territory of India.
- Why Article 44 is significant?
- The objective of Article 44 of the **Directive Principles** in the Indian Constitution was to address the discrimination against vulnerable groups and harmonise diverse cultural groups across the country.
- Dr. B R Ambedkar, while formulating the Constitution had said that a UCC is desirable but

for the moment it should remain voluntary, and thus the **Article 35** of the draft Constitution was added as a part of the **Directive Principles of the State Policy** in **part IV** of the Constitution of India as Article 44.

- It was incorporated in the Constitution as an aspect that would be fulfilled when the nation would be ready to accept it and the social acceptance to the UCC could be made.
- Ambedkar in his speech in the Constituent Assembly had said, ***“No one need be apprehensive that if the State has the power, the State will immediately proceed to execute...that power in a manner may be found to be objectionable by the Muslims or by the Christians or by any other community. I think it would be a mad government if it did so.”***

Why civil laws and criminal laws are not uniform?

- While the criminal laws in India are uniform and applicable equally on all, no matter what their religious beliefs are, the civil laws are influenced by faith.
- Swayed by religious texts, the personal laws which come into effect in civil cases have always been implemented according to constitutional norms.

Personal laws

- Personal laws are applied to a certain group of people based on their religion, caste, faith, and belief made after due consideration of customs and religious texts.
- The personal laws of Hindus and Muslims find their source and authority in their religious ancient texts.
 - In Hinduism, personal laws are applicable to legal issues related to inheritance, succession, marriage, adoption, co-parenting, obligations of sons to pay their father's debts, the partition of family property, maintenance, guardianship, and charitable donations.

Observations made by Allahabad HC on UCC

- The Allahabad High Court has rightly reminded the Government about Article 44 of the Indian Constitution which is a Directive Principle of Policy, which was meant to be parallel to a fundamental right to be implemented in due course. It made the following observations on the issue:
- The UCC is necessity and mandatorily required today.
- It cannot be made 'purely voluntary' as was observed by B.R. Ambedkar 75 years back, in view of the apprehension and fear expressed by the members of the minority community.
- It is the need of the hour that the Parliament comes up with a "single family code" to protect interfaith couples from being "hounded as criminals".

How UCC can help?

- **Protection and unity:** The UCC aims to provide protection to vulnerable sections including women and religious minorities, while also promoting nationalistic fervour through unity.
- **Simplified laws:** When enacted the code will work to simplify laws that are segregated at present on the basis of religious beliefs like the Hindu code bill, Shariat law, and others.
- **Easy adoption for all:** The code will simplify the complex laws around marriage ceremonies, inheritance, succession, adoptions making them one for all.
- **Application irrespective of faith:** The same civil law will then be applicable to all citizens irrespective of their faith.
- **End of conflict:** It will avoid conflicts in various personal laws in relation to marriage and divorce.

Other countries with 'One Country, One Law' formula

- Many other countries including France, United Kingdom (UK), United States (US), Australia, Germany, etc. already have similar laws in place which ensures the principle of one country, one law.

Is Indian society 'liberal' enough to adopt UCC?

- A set of people argue that reforms with reference to 'personal law' must come from within the community and should not be imposed by the legislature.
- Observing the past and prevailing attitude of the community leaderships, this is very unlikely to happen.
- The influential stakeholders enjoying the inadequate societal setup actually want to drag the subjects on the backward track.
- The outrage by stakeholders in the aftermath of the **Shah Bano (1985)** and **Triple talaq verdict** proves this.

◎ CONCLUSION

- Adoption of UCC will not only codify the un-codified laws, it will also eradicate unreasonable discriminatory provisions regarding adoption, succession, inheritance, guardianship, marriage, divorce and maintenance in Hindu, Muslim, Christian and Parsi laws.
- Although India has historically and culturally imbibed the feature of tolerating and accommodating diversity, but a diversity that leads to discrimination (especially of women) is of no glory. Thus, required steps in the right direction must be taken.

ERROR CORRECTED ON INTERPRETING POCSO ACT

CONTEXT:

Recently, the Supreme Court has set aside the controversial judgment of the Bombay HC which held that 'skin-to-skin' contact is necessary for an act to be classified as sexual assault under the Protection of Children from Sexual Offences (POCSO) Act.

◎ BACKGROUND

- Initially, the high court judgment which was passed on 15 January, by Nagpur Bench of High Court, freeing a 50-year-old man by ruling that holding the hand of a five-year-old girl and unzipping pants in front of her was not considered sexual assault under the POCSO Act.
- The second judgment was pronounced by on 19 January, interpreting sexual assault under the POCSO Act to include only "skin-to-skin" contact with sexual intent.
- Now, the Supreme Court now asserted that the high court judge had "fallen into a grave error" in arriving at the judgments, and set them aside.
- Supreme Court heard appeals filed by the Attorney General of India, the National Commission for Women and the Maharashtra government.

◎ ANALYSIS

What is POCSO act?

- The Protection of Children from Sexual Offences (POCSO) Act was enacted in 2012 especially to protect children aged less than 18 from sexual assault.
- It admitted that a number of sexual offences against children were neither specifically provided for in existing laws nor adequately penalised.
- Therefore an offence against children needs to be explicitly defined and countered through proportionate penalties so that it acts as an effective deterrence.
- The UN Convention on the Rights of the Child which was ratified by India in 1992 requires sexual exploitation and sexual abuse to be addressed as heinous crimes.

Why the High Court verdict is controversial?

- Ignored the basic fact that the entire Act is aimed at penalising actions rooted in 'sexual intent'. So the judgment is out of sync with the legislative intent behind the enactment of stringent law.
- The law is to protect children based on principles found in the UN Convention on the Rights of the

Child.

- Restricting the interpretation of the words 'touch' or 'physical contact' to 'skin to skin contact' would be a narrow and pedantic interpretation of Section 7 of the POCSO Act.
- So, the Supreme Court verdict ensured that the core ingredient of a sexual offence is the "sexual intent".

What is the opposition to verdict?

- NCRB data for the past year shows that India registered 43,000 cases under the POCSO Act. That means that on an average, a child faced sexual assault every 12 minutes. Against such a background, this verdict by the Bombay High Court caused anger in many circles.
- Workers active in child protection and welfare said that such decisions would further encourage perpetrators and children will be left unable to bring forward cases of such incidents against them.

How does POCSO and IPC deal with sexual assault?

- In IPC the definition of assault or criminal force to woman with intent to outrage her modesty is very generic.
- In POCSO, the acts of sexual assault are explicitly mentioned such as touching various private parts or doing any other act which involves physical contact without penetration.
- However it excludes rape which requires penetration and otherwise the scope of 'sexual assault' under POCSO and 'outraging modesty of a woman' under the IPC is the same.
- IPC provides punishment for the offence irrespective of any age of the victim but POCSO is specific as it is for the protection of children.
- Section 7 of the POCSO Act says that whoever with sexual intent touches the private parts of the child is said to commit sexual assault & the Section 8 of Act provides minimum imprisonment of 3 years.
- Whereas Section 354 of the IPC lays down a minimum of one year imprisonment for outraging the modesty of a woman.

- What were the earlier judgements that stirred debates?
- Nagpur Bench's judgement - In 2020, the Bombay High Court's Nagpur bench acquitted a man under POCSO Act and held that an act against a minor would amount to groping or sexual assault only if there was "skin-to-skin" contact.
- The High Court had concluded that mere touching or pressing of a clothed body of a child did not amount to sexual assault.
- The accused was sentenced to minimum 3 years imprisonment under Section 8 of the POCSO Act but the High Court reduced his sentence to 1 year under Section 354 (assault of a woman to outrage her modesty) of the Indian Penal Code.
- Gadchiroli special court's judgement – The special court convicted and sentenced the accused for offences punishable under IPC Section 448 and 354-A (1)(i) and Sections 8 and 10 read with Sections 9(m) and 12 of POCSO Act.
- But the court set aside his conviction under Sections 8 and 10 of POCSO Act.

What is the Supreme Court's interpretation?

- The Supreme Court has set aside the two judgments that acquitted two offenders against children from the graver charge of sexual assault.

- The court has said that narrow interpretation of the words 'touch' or 'physical contact' to 'skin to skin contact' of Section 7 would frustrate the very object of the Act.
- The court ruled that the act of touching the sexual part of body or any other act involving physical contact, if done with sexual intent would amount to sexual assault within the meaning of Section 7 of POCSO Act.

Why is the judgement significant?

- The High Court's understanding was flawed and out of sync with the legislative intent behind the enactment of a stringent law to protect children.
- The Supreme Court judgment sets right the misinterpretation of the statute and underscores that the core ingredient of a sexual offence is the "sexual intent" behind it.
- The Court's decision of holding such an accused guilty is in the spirit of the legislation enacted to protect a child's dignity and autonomy from undesirable intrusions.
- For a country that reported over 43,000 POCSO offences in the past one year and where the conviction rates are very low, the SC observation should accelerate things towards an unmistakably clear-cut and firm view of the situation.

THE DECENTRALISATION CHARADE OF URBAN LOCAL BODIES

CONTEXT:

- ❑ In India, the “disorganized” nature of urban planning habitually becomes a topic of public debate whenever cities encounter a major crisis (urban flooding in Chennai).
- ❑ Since urban planning and its enforcement are routinely declared the culprit of India’s “dysfunctional” cities, it is important to examine the roots underpinning India’s current urban planning regime.

◎ BACKGROUND

- Since the late 1980s, the world has been witnessing a wave of ‘decentralisation’, which is founded upon the idea of making governance more participatory and inclusive.
- In 1992, India too embraced this wave and amended its constitution with the intent to strengthen grassroots-level democracy by decentralising governance and empowering local political bodies.
 - The objective was to create local institutions that were democratic, autonomous, financially strong, and capable of formulating and implementing plans for their respective areas and providing decentralised administration to the people.
 - It is based on the notion that people need to have a say in decisions that affect their lives and local problems are best solved by local solutions.
- However today, local government or ULBs in India faces multiple issues (administrative and governing). Thus, this brief attempts to provide an analysis of the current scenario of the system and how ‘actual decentralisation of power’ can make things better.

bodies (ULBs) (including municipal corporations) as institutions of local self-government.

- It also empowered state governments to devolve certain functions, authority, and power to collect revenue to these bodies, and made periodic elections for them compulsory.
- Urban governance is part of the state list under the Constitution.
- Thus, the administrative framework and regulation of ULBs varies across states.
- **Levels:** The Act stipulated three levels of municipal bodies to be set up in the country:
 - **Nagar Panchayat:** Nagar Panchayat for a transitional area (an area in transition from a rural area to an urban area).
 - **Municipality:** It is constituted for a smaller urban area
 - **Municipal Corporation:** It is constituted for a larger urban area exceeding 3 lakhs population.

Major challenges faced by Indian ULBs

- **Lack of autonomy in management:** ULBs across the country lack autonomy in city management and several city-level functions are managed by parastatals (managed by and accountable to the state).
- **Lack of fiscal autonomy:** Indian ULBs are amongst the weakest in the world in terms of fiscal autonomy and have limited effective devolution of revenue.
- **Limited source of revenue:** They also have limited capacity to raise resources through their own sources of revenue such as property tax.
- **Dependency:** Lack of finance and other required power lead to a dependence on transfers by the state and central government.
- **Skin-tight control of government:** Government crafts its own schemes for the ULBs run at the local level with financial contribution from the GoI. These schemes run with skin-tight administrative

◎ ANALYSIS

Understanding the structure of Urban Local Bodies in India

- The Government passed the **Constitution (74th Amendment) Act, 1992** with the avowed purpose of local empowerment and decentralisation.
- However, the Act, while setting empowerment and decentralisation as objectives, ended up handing the ULBs over to the control of the states.

Salient-features of the Act

- The **Constitution (74th Amendment) Act, 1992** provided for the establishment of urban local

and financial control, asking the ULBs to essentially carry out the will of the GoI.

- **Low encouragement by state government:** Not only the centre, even the states, themselves want to give no elbow room to the ULBs in local governance.
- **State approvals:** The Indian ULBs are amongst the most rigorously controlled local bodies dominated in their governance by state parastatals and functionaries.
 - State district authorities retain control of the ULBs.
 - Their chief executives get posted by states; their budgets, with certain exceptions, are subject to state approval, and mayors, in general, continue to be figure-heads with little administrative, financial, and functional powers.
 - Development plans of ULBs are subject to state approval and there are instances of very substantive changes made in their plans and regulations even against the will of the ULBs.

Impact on the governance

- **Poor service delivery:** The above multiple challenges have led to poor service delivery in cities.
- **Administrative and governance challenges:** It has also created administrative and governance challenges at the municipal level.

Why the focus is shifting towards ULBs 'now'?

- Urbanisation in India is taking place at a faster pace than ever before.
- It is estimated that every minute, some 30 people are migrating to Indian cities from rural areas; if the trend continues, the country's urban population is likely to reach 600 million by 2030.
- Cities are growth hubs for India, and the country's transformation depends directly on their **governance and sustainable urbanisation**.
- According to the **Niti Aayog**, India requires an INR 40-trillion investment until 2030 to overhaul its infrastructure whereas the revenue of all the municipal corporations put together is not more than INR 1.2 trillion — approximately one percent of the country's Gross Domestic Product (GDP).
- Substantially underfunded mandates include crumbling municipal corporations, which lie at the core of this urban transformation challenge.

Why decentralisation is essential?

- **Good governance:** In the democratic world, decentralisation is amongst the most significant instruments for good governance.

- **Greater knowledge and informed decisions:** It brings decision-making closer to the people and allows authorities with greater knowledge of local conditions to make more informed decisions.

Government Schemes championing decentralization

- Jawaharlal Nehru Urban Renewal Mission (JnNURM)
- Smart Cities Mission
- Atal Mission for Rejuvenation and Urban Transformation (AMRUT)

What about public participation?

- The significance of citizen empowerment for democratic salubrity has been long recognised.
- However, the struggle in India for institutionalising citizen's participation in ULBs has till date been a long, unsuccessful struggle.
- Indian ULBs have been unwilling to allow any meaningful direct citizen participation in any aspect of civic governance.
- Considerable progress in this area has been achieved in the western world, aided by the march of technology, social media, and the ease of establishing online platforms for citizen interaction.
- Since information flow is rapid and voluminous in the modern world, citizens in many Indian cities have formed groups and associations with a view to press for decision-making space in their own localities.
- GoI itself initiated the Model Nagar Raj Bill to institutionalise people's participation.

Model Nagar Raj Bill (MNRB)

- The GoI had also drafted a Model Nagar Raj Bill (MNRB) for the consideration of and adoption by the states.
- The MNRB introduced the concept of 'Area Sabha' defined as "the body of all persons registered in the electoral rolls pertaining to every polling booth in the area of a municipality."

This initiative, however, fell on deaf ears of the states. Only a dozen states passed the community participation law.

Concluding thoughts

- The above analysis leads to a clear conclusion that each level of government does not want to shed any authority to a lower level of government.
- The centre works to retain all of its power base and keeps looking for areas of expansion of its authority.
- The state has a similar attitude for the urban local bodies.

- The ULBs in turn want no governance space to be ceded to wards committees.
- And the wards committees want to have nothing to do with citizens and their groups.

All talk of decentralisation becomes a charade, to be continuously talked about without doing anything about it.

BHARAT GAURAV SCHEME TO PROMOTE TOURISM

CONTEXT:

Recently, the Indian Railways has announced the new scheme 'Bharat Gaurav' to tap the huge potential of tourism. Under which, theme-based tourist circuit trains, on the lines of the Ramayana Express, can be run either by private or State-owned operators.

● ANALYSIS

About Bharat Gaurav Scheme

- Service providers, who can be an individual, company, society, trust, joint venture or consortium will be free to decide themes/circuits.
- They can offer an all-inclusive package to tourists including rail travel, hotel accommodation and sightseeing arrangement, visit to historical/heritage sites, tour guides etc.
- They have full flexibility to decide the package cost.
- The service providers will also be able to design/furnish the interior of the coaches based on the theme and put branding or advertising inside and outside of the train.
- For this purpose, railways have earmarked 3033 ICF coaches, roughly equal to 150 trains.

What is the process to apply under this scheme?

- Easy one step transparent online registration process. Registration fee of Rs 1 (One) Lakh only.
- Allotment of coaches to all eligible applicants subject to availability. Priority to be based on the Rake Security Deposit Time and Date. Rake Security Deposit of Rs 1 (one) Crore per rake.
- Individual, Partnership Firm, Company, Society, trust, JV/Consortium (Unincorporated/Incorporated) are eligible.
- Right to Use charges and Haulage charges notified in the policy for Service Provider to work out his business model.
- **Right to Use Period:** 2-10 years.

How is Tourism important for nation's economy?

- **Generating Income and Employment:** Tourism in India has emerged as an instrument of income, employment generation, poverty alleviation and sustainable human development.
- **Source of Foreign Exchange Earnings:** Tourism is an important source of foreign exchange earnings

in India. This has favourable impact on the balance of payment of the country.

- **Preservation of National Heritage and Environment:** Tourism helps preserve several places which are of historical importance by declaring them as heritage sites. For instance, the Taj Mahal, the Qutab Minar, Ajanta and Ellora temples, etc, would have been decayed and destroyed had it not been for the efforts taken by Tourism Department to preserve them.
- **Developing Infrastructure:** Tourism tends to encourage the development of multiple-use infrastructure that benefits the host community, including various means of transports, health care facilities and the hotels and high-end restaurants that cater to foreign visitors.
- **Promoting Peace and Stability:** Tourism industry can also help promote peace and stability in developing country like India by providing jobs, generating income, diversifying the economy, protecting the environment, and promoting cross-cultural awareness.

Why Heritage Tourism is significant for India?

- Heritage tourism is defined as "travel undertaken to explore and experience places, activities, and artefacts that authentically represent the stories and people of the past and present". It is oriented toward cultural heritage of the tourist location.
- It involves visiting historical or industrial sites, religious travel or pilgrimages.
- India is well known for its rich heritage and ancient culture.
- The country's rich heritage is amply reflected in the various temples, majestic forts, pleasure gardens, religious monuments, museums, art galleries and urban and rural sites which are citadels of civilization.
- All these structures form the products of heritage tourism.

What are the others related schemes?

- SWADESH Darshan Scheme
- PRASHAD Scheme
- Buddhist Enclave
- Dekho Apna Desh initiative

The purpose of these schemes is to create awareness about and promote various tourism destinations of India – including the lesser-known destinations and lesser-known facets of popular destinations.

What are the challenges in tourism Industry of India?

- Tourism industry in India is growing and it has vast potential for generating employment and earning large amount of foreign exchange besides giving a fillip to the country's overall economic and social development.
- **Lack of Proper Infrastructure:** Infrastructure needs for the travel and tourism industry range from physical infrastructure such as ports of entry to modes of transport to urban infrastructure such as access roads, electricity, water supply, sewerage and telecommunication.
- **Access and Connectivity:** The infrastructure facilities like air, rail, road connectivity, and hospitality services are still needs to be improved to connect various cities across the country.
- **Amenities:** Amenities available at various tourist locations and en route need to be improved. These include basic amenities such as drinking water, well maintained and clean waiting rooms and toilets, first aid and wayside such as lounge, cafeteria, and parking facilities, among others.
- **Human Resource:** To sustain growth in the tourism industry trained manpower is required at various levels such as managerial, supervisory, skilled or semi-skilled. At mid and senior management

levels, the industry faces talent crunch and at the front-line staff level, although human resources are adequate, a boom in other service industries such as banking, retail, airline and BPO have resulted in shortage of manpower at this level for the travel and tourism industry.

- **Marketing and Promotion:** India needs to change its traditional marketing approach to a more competitive and modern approach. There is a need to develop a unique market position and the brand positioning will be the essence of the country's tourism products to the potential customer.
- **Security:** Security has been a major problem for our growth in tourism for a number of years. Terrorist attacks or political unrest in different parts of the country have adversely affected sentiments of foreign tourists. However, the government needs to take a proactive approach in addressing these issues and in averting the potential impact on the industry.

CONCLUSION

- Tourism has become the world's largest industry, generating wealth and employment, opening the minds of both visitors and the visited to different ways of life. In worldwide this industry currently employs more than 200 million people. Moreover tourism is one of the best instruments of economic development in all the way.
- Tourism sector plays a vital role in the way of helping poor countries to provide employment opportunities in an increasing rate. It is one of the important foreign exchange earning industries has manifested great potential of growth under liberalized Indian economy.
- India's tourism industry is experiencing a strong period of growth, driven by the burgeoning Indian middle class, growth in high spending foreign tourists, and coordinated government campaigns to promote 'Incredible India'.

RBI CAUTIONS CO-OPERATIVE SOCIETIES AGAINST USING TERM “BANK”, UNDERSTANDING INDIA’S ‘BANKING’ STRUCTURE

CONTEXT:

- ❑ The Reserve Bank of India has noted that some cooperative societies are using the word ‘bank’ in their names, in contravention of Banking Regulation Act. Some cooperative societies are even accepting deposits from non-members without any licensing or approval from the central bank.
- ❑ In light of these developments, the RBI clarified that cooperative societies are not allowed to use “bank”, “banker” or “banking” in their names.

◎ ANALYSIS

Understanding the ‘banking’ structure of India

Reserve Bank of India is the central bank of the country and regulates the banking system of India.

- Established in 1911, Central Bank of India was the first Indian commercial bank which was wholly owned and managed by Indians.
- The establishment of the Bank was the ultimate realisation of the dream of **Sir Sorabji Pochkhanawala**, founder of the Bank.
- **Sir Pherozesha Mehta** was the first Chairman of a truly ‘Swadeshi Bank’.

The structure of the banking system of India can be broadly divided into following categories:

- **Commercial Banks:** They are regulated under the Banking Regulation Act, 1949. Their primary function is to accept deposits and grant loans to the general public, corporate and government. Commercial banks can be divided into-
 - **Public sector banks:** These are the nationalised banks. (e.g.- Central Bank of India)
 - **Private sector banks:** Major stake or equity is held by private shareholders. (e.g.- Axis Bank)
 - **Foreign banks:** Its headquarters in a foreign country but operates in India as a private entity. (e.g.- HSBC, Citibank)
 - **Regional Rural Banks (RRB):** These are also scheduled commercial banks but they are established with the main objective of providing credit to weaker sections of the society like agricultural labourers, marginal farmers and small enterprises. (e.g.- Sarva Haryana Gramin Bank (sponsored by Punjab National Bank))
- **Small Finance Banks:** This banking segment is aimed to provide financial inclusion to sections of the society that are not served by other banks. (e.g.- Au Small Finance Bank Ltd.)

- **Payments Banks:** It is a new model of bank, conceptualised by the RBI to accept a restricted deposit. (e.g.- Airtel Payment Bank)
- **Co-operative Banks:** Registered under the Cooperative Societies Act, 1912, they are run by an elected managing committee.
- Cooperative Society is an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspiration through jointly owned and democratically controlled enterprises.
- These are service enterprises aiming at rendering service to its members. They are of two type:
 - **Urban Co-operative Banks**
 - **Rural Co-operative Banks**

Banks can also be classified on the basis of Scheduled and Non-Scheduled Banks.

Scheduled Banks

- They are covered under the 2nd Schedule of the **Reserve Bank of India Act, 1934**.
- Such banks are also covered under the depositor insurance program of **Deposit Insurance and Credit Guarantee Corporation (DICGC)**.
- To qualify as a scheduled bank, the bank should conform to the following conditions:
 - paid-up capital of Rs. 5 Lakh and above
 - A bank requires to satisfy the central bank that its affairs are not carried out in a way that causes harm to the interest of the depositors
 - A bank should be a corporation rather than a sole-proprietorship or partnership firm

Non-scheduled banks

- These banks refer to the local area banks which are not listed in the Second Schedule of Reserve Bank of India.

- Non-Scheduled Banks are also required to maintain the cash reserve requirement, not with the RBI, but with them.

Why co-operatives cannot use the term 'bank'?

- The Banking Regulation Act, 1949 (BR Act, 1949) was amended by the Banking Regulation (Amendment) Act, 2020 (Act 39 of 2020) which came into force on September 29, 2020.
- Accordingly, co-operative societies cannot use the words "bank", "banker" or "banking" as part of their names, except as permitted under the provisions of **BR Act, 1949** or by the **Reserve Bank of India**.
- Using "bank" in their names in violation of **Section 7** of the Banking Regulation Act, 1949 (As Applicable to Co-operative Societies).
- Such societies neither possess any licence under **Banking Regulation Act**, nor have they authorised by the RBI for carrying out banking business.
- **Allowed functions:** A co-operative bank may issue equity, preference, or special shares on face value or at a premium to its members, via a public issue or private placement.

Central Bank of India

- Established in 1911, Central Bank of India was the first Indian commercial bank which was wholly owned and managed by Indians.
- The establishment of the Bank was the ultimate realisation of the dream of Sir Sorabji Pochkhanawala, founder of the Bank.
- **Sir Pherozesha Mehta** was the first Chairman of a truly 'Swadeshi Bank'.

What they "cannot" do?

- They cannot accept deposits from non-members without any licensing or approval from the central bank.
- They are not authorised by the RBI for carrying out banking business.
- The insurance cover from Deposit Insurance and Credit Guarantee Corporation (DICGC) is also not available for deposits placed with these societies.

- DICGC is a wholly-owned subsidiary of the Reserve Bank of India (RBI).
- It provides deposit insurance that works as a protection cover for bank deposit holders when the bank fails to pay its depositors.

THE STATE OF FOOD AND AGRICULTURE 2021

CONTEXT:

- ❑ The recently released Food and Agriculture Organization's (FAO) 2021 State of Food and Agriculture (SOFA) report – Making agrifood systems more resilient to shocks and stresses contains some shocking revelation.
- ❑ To deal with the situation it proposes urgent reform to the 'agri-food systems' of the world.

◎ BACKGROUND

- The COVID-19 pandemic exposed the vulnerability of agri-food systems to shocks and stresses and led to increased global food insecurity and malnutrition.
- Action is needed to make agri-food systems more resilient, efficient, sustainable and inclusive.
- The State of Food and Agriculture 2021 presents country-level indicators of the resilience of agri-food systems.
- The indicators measure the robustness of primary production and food availability, as well as physical and economic access to food.
- They can thus help assess the capacity of national agri-food systems to absorb shocks and stresses, a key aspect of resilience.

◎ ANALYSIS

Key-findings of the Report

- **Unaffordable diet:** Approximately three billion people, almost 40 per cent of the world's population, cannot afford a healthy diet.
- **Reduced income, reduced diet:** And another one billion people could join their ranks should further unpredictable events reduce incomes by one-third.
- **Increased food cost due to critical transport link:** Food costs could increase for up to 845 million people if a disruption to critical transport links were to occur.
- **All included:** While low-income countries generally face much greater challenges, middle-income countries are also at risk.
 - In **Brazil**, for example, 60 per cent of the country's export value comes from just one trading partner, narrowing its options should a shock hit that partner country.
 - Even high-income countries, such as **Australia** and **Canada**, are at risk because of the long distances involved in the distribution of food.

- The report states that, without proper preparation, unpredictable shocks will continue to undermine these systems.
- It defines shocks as short-term events that have negative effects on a system, people's well-being, assets, livelihoods, safety and ability to withstand future shocks.

Why sustainable Agri-food system is essential?

- A sustainable agri-food system is one in which a variety of sufficient, nutritious and safe foods is available at an affordable price to everyone, and nobody is hungry or suffers from any form of malnutrition.
- Agri-food systems include primary production, food supply chains, domestic transport networks and households — and involve many interlinked actors.
- The agri-food systems produce about 11 billion tonnes of food yearly and employ 4 billions people directly and indirectly.
- The agri-food sector, including forestry and fisheries, also accounts for a third of the anthropogenic greenhouse gas emissions driving climate change. It occupies 37 per cent of the Earth's land area.
- Agri-food system, therefore, play an essential role in realising other SDGs related to poverty, resource and energy efficiency, cleaner economies, and healthy aquatic and terrestrial ecosystems.

What are the challenges to agri-food systems?

- **Complex system with multiple actors:** Agri-food systems are complex in nature (including primary production, food supply chains, domestic transport networks and households) and involve many interlinked actors. Thus, a shock in any component can spread rapidly throughout systems.
- **Extra fragile system:** The fragility of agri-food systems can affect large numbers of people.

What needs to be done?

- **Resilient agri-food system:** To preserve their functionality and ensure the food security, nutrition and livelihoods of millions of people, agri-food systems must become more resilient to increasing shocks and stresses of diverse origins, both biophysical and socio-economic.
- **Absorptive capacity for unforeseen shocks:** Of the five distinct resilience capacities agri-food systems must have – to prevent, anticipate, absorb, adapt and transform – absorptive capacity is critical in confronting unforeseen shocks and is complementary to risk management of shocks that can be anticipated.
- **Diversity:** Key to building the absorptive capacity of agri-food systems is
 - ▶ diversity in food sources (domestic production, imports or existing stocks)
 - ▶ diversity of actors in food supply chains
 - ▶ redundant and robust transport networks
 - ▶ affordability of a healthy diet for all households, particularly the poorest and most vulnerable
- **Risk management:** Risk management strategies for shocks such as droughts, floods and pests – including multi-risk assessments, timely forecasts, early warning systems and early action plans – are key to help all agri-food systems' actors prevent

and anticipate major disruptions to systems and avoid human suffering and costly recovery interventions.

- **Effective Government support:** Enhancing the resilience of food supply chains requires government support to develop small and medium agri-food enterprises, cooperatives, consortia and clusters, as well as social protection programmes.
- **Economic access to food:** Ensuring economic access to sufficient food for a healthy diet at all times is a key dimension of agri-food systems' resilience.
- **Policies and investments:** Policies and investments that reduce poverty, generate decent employment and expand access to education and basic services, as well as social protection programmes when needed, are essential.

◎ CONCLUSION

- In the light of the current challenges in the food system, building resilient agri-food systems should be a key policy objective and must ensure that all agri-food systems' components function well over time. This requires mainstreaming resilience in agri-food policies and greater coordination across all relevant sectors and layers of government institutions to ensure policy coherence.

THE PANOPTIC NATURE OF BIOMETRIC TECHNOLOGY

CONTEXT:

- Facebook, now renamed as Meta Platforms Inc, had recently stated that it would be shutting down its facial recognition technology (FRT) on its platform, following a class action lawsuit against it for failing to perform necessary disclosures related to handling of its users' biometric data.
- This development has brought the facial recognition technology (FRT) into limelight.

● ANALYSIS

What is Facial Recognition Technology?

- Facial recognition is a biometric technology that uses distinctive features on the face to identify and distinguish an individual.
- Facial recognition technology has been introduced primarily for two purposes:
 - As a compare and contrast tool meant for identification based on existing information.
 - To create a repository on the basis of which the process of identification can be enhanced.

What are the concerns related to it?

- Without proper laws protecting digital privacy, inappropriate use of facial recognition technology will **enable mass surveillance**.
- A growing body of research shows that biometric scanning technologies coupled with AI have an inherent bias. There seems to be an **algorithmic bias** in this technology.
 - A report by the U.S. National Institute of Standards and Technology (NIST) noted that facial recognition technology found Black, Brown and Asian individuals to be 100 times more likely to be misidentified than white male faces.
- Scanning technology and biometric tracking pose a **grave threat to freedom of expression**, a fundamental right as envisaged by the Indian Constitution.
- There have been numerous instances when this technology was used by law enforcement agencies to crack down on protestors even in legitimate causes.
- 100% accuracy** in finding matches has not been achieved under this technology. Facial recognition does not return a definitive result. It identifies or verifies only in probabilities.

Why is it important?

- FRT can act as valuable tool for the law enforcement agencies to nab criminals.
- Biometric recognition creates a specific link between an individual and a data record.** Physical characteristics and behavior patterns are personally unique, and unlike passwords or PINs, can't be deciphered or recreated by sophisticated hacking software
- Biometric authentication thwarts fraudsters' efforts to create multiple fake digital identities.** Culling through existing biometric data exposes people who already registered with a different identity.
- Biometrics are not exchangeable.** Because fingerprints or keyboarding patterns aren't transferable, biometrics is especially effective in protecting sensitive information such as financial data or healthcare records.
- Open banking demands reliable digital identity protection.** Banks choosing to increase their online product offerings by opening their digital infrastructure to third party fintech providers need the reliable and specific digital identity protection biometric security delivers.
- Biometrics balance convenience, security, and user experience.** Users forget passwords and PINs; their fingerprints are always available. Consumers lose smart cards or tokens; they always have their face. User-friendly biometric systems deliver exactly what consumers want: frictionless and secure user experiences.
- Inborn biometrics don't change.** A haircut or cosmetic surgery can alter facial contours, but inherent biological traits do not change over a lifetime.
- Stolen biometric data can be challenging to use.** Today's sophisticated biometric systems use "liveness" elements to detect spoofs example fake images, and some fingerprint scanners have pulse detectors.

What are the dangers associated with biometric technology?

- **Infringement of Privacy:** The privacy of users' data is at stake with the technology. In absence of regulations it would expose data to cyber criminals. Companies are not regulated, thus they may sell biometric data which can be misused for political purposes.
- **State surveillance:** The most significant risk with the use of the technology is state surveillance. China's reported use of facial recognition technologies for surveillance in Xinjiang is such an example. This raises concerns as it might be misused for political purposes.
- **Inaccuracy:** Biometrics technology is inaccurate. Evidence shows that the technology is not flawless. For example, the technology has been proven in multiple studies to be inaccurate at identifying people of colour, especially black women.
- **Predatory marketing:** Software which analyses biometrics could potentially be put to use by some companies to prey on vulnerable customers. This could be done by segmenting extreme emotions such as distress and tailoring their products and services to these individuals.
- **Stalking:** Tools like reverse image searches can provide stalkers with more data about their victims. This is unsafe especially for women, who can be tracked and stalked and maybe assaulted by misusing information obtained.
- **Identity fraud:** Criminals who have collected enough personal information on an individual could commit identity fraud. This could have a significant effect on your personal life, including on finances. For example, fake id can be created by exploiting information obtained from persons' associated biometric information. Crime like photo morphing can threaten the identity of an individual.
- **Dark activities:** There is possibility of misusing biometric information for illicit activities and markets like drug selling, weapons etc. By using stolen ids, Aadhar information, it also increases risk for being used in various terrorist activities across the border.

How human rights community has voiced its opinion against FRT?

- Growing calls for laws in various countries to curb the ill-effects of FRT.
- Some U.S. lawmakers introduced the Facial Recognition and Biometric Technology Moratorium Act in 2020. Also several states in the U.S. have banned the use of FRT.

- In the EU, Article 9 of the General Data Protection Regulation (GDPR) prohibits processing of personal biometric data for the purposes of identifying an individual. This provides the much needed protection against FRT infringing on individual's privacy.

What is the scenario in India?

- The National Crime Records Bureau in India has requested for proposals to create a **National Automated Facial Recognition System (NAFRS)** to build a national database of photographs to identify criminals.
- Notably India lacks a robust legal framework to address the possible misuse of biometric technology even as the Union Government deployed over a dozen different FRT systems across the country that collect and use biometric data.
- India still does **not have** a personal data protection law. The draft Personal Data Protection Bill, 2019 is still under parliamentary scrutiny.

Instances of usage in India

- The govt used facial recognition technology to track down the protestors who were present at the Red Fort on January 26, 2021
- UP police is using an AI-based facial recognition system called Trinetra. Police used this software to run surveillance on anti-CAA protestors following which more than 1,100 arrests were made.
- The Central Board of Secondary Education (CBSE) used facial recognition to match admit card photos on record to match students logging in to give their board exams.
- The Internet Freedom Foundation (IFF) estimates that there are currently 42 ongoing facial recognition projects in India, from the Automated Multimodal Biometric Identification System (AMBIS) in Maharashtra to FaceTagr in Tamil Nadu. Of these, at least 19 are being developed and deployed by state-level police departments and the NCRB for the specific purpose of security and surveillance.

Implications

- The biggest implication is the likely impact on **Right to privacy**. In Justice **K.S. Puttaswamy vs Union of India (2017)** Supreme Court recognized right to privacy as a precious fundamental right and provided a three-fold requirement. Accordingly, any encroachment on the right to privacy requires:
 - The existence of 'law' (to satisfy legality of action)

- ▶ There must exist a 'need', in terms of a 'legitimate state interest'
- ▶ The measure adopted must be 'proportionate' (there should be a rational nexus between the means adopted and the objective pursued) and 'least intrusive.'
- **Unfortunately, NAFRS fails each one of these tests.**
 - ▶ **NAFRS lacks 'legitimacy':** It does not stem from any statutory enactment (such as the DNA Technology (Use and Application) Regulation Bill 2018 proposed to identify offenders or an executive order of the Central Government. Rather, it was merely approved by the Cabinet Committee on Economic Affairs in 2009.
 - ▶ **Disproportionate measure:** Even if we assume that there exists a need for NAFRS to tackle modern day crimes, this measure is grossly disproportionate. This is because to satisfy the test of 'proportionality', benefits for the deployment of this technology have to be sufficiently great, and must outweigh the harm.
 - For NAFRS to achieve the objective of 'crime prevention' or 'identification' will require the system to track people on a mass-scale, resulting in **everyone becoming a subject of surveillance**: a disproportionate measure.

Suggestions/Measures

- **Adequate safeguards:** Both the Information Technology Act 2000, and the Personal Data Protection Bill 2019 gives the central government unchecked power for the purposes of surveillance. We need adequate safeguards such as penalties so that police personnel are not able to misuse the facial recognition technology.
- **Algorithmic Impact Assessment:** Agencies that want to deploy these technologies should be required to carry out a formal algorithmic impact assessment (AIA). Modelled after impact-assessment frameworks for human rights, environmental protection and data protection, AIAs help governments to evaluate artificial-intelligence systems and guarantee public input.
- **Rigorous review:** Legislation should be enacted that requires that public agencies rigorously review any facial recognition technologies for bias, privacy and civil-rights concerns.

◎ WAY FORWARD

- Without accountability and oversight, facial recognition technology has strong potential for misuse and abuse. In the interest of civil liberties and to save democracy from turning authoritarian, it is important to impose a moratorium on the use of facial recognition technology till we have meaningful checks & balances, in addition to statutory authorization of NAFRS and guidelines for deployment.

PERSONAL DATA PROTECTION BILL, 2019: ASSESSING THE ROLE OF DATA AND THE NEED OF ITS PROTECTION

CONTEXT:

The Joint Parliamentary Committee (JPC) set up to go into the Personal Data Protection Bill, which was first tabled in Parliament in 2019, has finalised its report on the long-pending legislation that seeks to provide rights to individuals against the misuse of data pertaining to them, paving the way for its tabling in Parliament.

◎ BACKGROUND

- In the coming time when data is going to be figuratively considered to be more valuable than oil given its centrality in the new digital economy.
- In this regard, the Bill is expected to fill a big lacuna in India's data protection regime.
- The Bill is a direct outcome of the 2017 Supreme Court judgment in the Justice KS Puttaswamy vs Union of India case, in which it recognised 'privacy' as a fundamental right.
- While passing its judgment in the case, it had directed the Centre to bring in a robust data protection law.

◎ ANALYSIS

What is in the Bill?

- The original draft PDP Bill, which was introduced in Parliament in December 2019, was aimed at laying down provisions to safeguard "the privacy of individuals relating to their personal data" by, among other things, specifying the flow and usage of personal data and creating a relationship of trust between persons and entities processing the personal data.
- It's designed to protect a user's rights vis-a-vis the way her data is processed by creating "a framework for organisational and technical measures in processing of data, laying down norms for social media intermediary, cross-border transfer, accountability of entities processing personal data, remedies for unauthorised and harmful processing".
- To implement the law, the Centre envisaged the creation of a Data Protection Authority of India.

Personal data

The Bill defines 'personal data' as any information "about or relating to a natural person who is directly or indirectly identifiable" being linked thus to any "characteristic, trait, attribute or any other feature of the identity of such natural person, whether online or offline".

Important provisions of the Bill

- The Bill covers the processing of any personal data which has its source within India by the government and its agencies, Indian companies, private citizens or "any person or body of persons incorporated or created under Indian law".
 - It also extends broadly to entities based abroad who process data arising in India.
- **Data owners:** The owner of the data under the Bill are identified as 'data principals' while companies or entities storing or processing such data are classified as a 'data fiduciary'.
 - **Data processor:** It also identifies any person or entity "who processes personal data on behalf of a data fiduciary" as a 'data processor'.
 - A data fiduciary under the Bill is obligated to ensure that personal data is processed only for specific and lawful purposes with a focus on transparency and accountability.
- **Protection safeguards, grievance resolving:** The collector of data is tasked with the responsibility of putting in place adequate data protection safeguards and creating a mechanism for receiving and resolving grievances submitted by users, among other things.
- **Right to seek confirmation:** The Bill empowers individuals to seek a confirmation from the data fiduciary regarding the processing of their personal data and obtain rectification of inaccurate, incomplete, or out-of-date personal data.
- **Right to be forgotten:** The bill had provisions to grant the right to be forgotten to data owners as well as the right to erase, correct and porting of data.
- **Fines for violation:** The Bill also lays down hefty fines for the violations of its terms, going up to Rs 15 crore or 4 per cent of a company's worldwide turnover, whichever is higher.

Concerns regarding the Bill

- It is argued that there are exemptions provided to government agencies to collect and process data in

a way that violates a person's right to privacy, held by the Supreme Court to be a fundamental right.

- Two specific features that have been flagged as being of concern are those contained in Articles 12(a) and 35 of the Bill.
 - **Article 12(a)** does away with the need for informed consent of the data principal for the processing of her data
 - **Article 35**, lays down that the government may, "in the interest of sovereignty and integrity of India, the security of the state, friendly relations with foreign states, public order" direct that "all or any of the provisions of this Act shall not apply to any agency of the government in respect of processing of such personal data".

- Privacy is a fundamental human right specifically recognised under-
 - **Article 12 of the Universal Declaration of Human Rights**
 - **Article 17 of the International Covenant on Civil and Political Rights ("ICCPR")**
- The **Protection of Human Rights Act, 1993** has referred to the ICCPR as a human rights instrument and the latter makes it mandatory for states to take steps for realisation of such right and ensure protection against interference by private parties.
- Article 51 of the Constitution of India, which forms part of the Directive Principles of State Policy, requires the state to endeavour to "foster respect for international law and treaty obligations in the dealings of organised people with one another".

Why is data protection important?

- Data protection is the process of safeguarding important information from corruption, compromise or loss.
- The importance of data protection increases as the amount of data created and stored continues to grow at unprecedented rates. There is also little tolerance for downtime that can make it impossible to access important information.
- Consequently, a large part of a data protection strategy is ensuring that data can be restored

quickly after any corruption or loss. Protecting data from compromise and ensuring data privacy are other key components of data protection.

Data protection law in other countries

- **European Union:** General Data Protection Regulation (GDPR)
- **California:** California Consumer Privacy Act (CCPA)
- **South Africa:** Protection of Personal Information Act (POPI Act)

What are the challenges to data protection?

- **Free flow, a threat to regulation:** Data being borderless and accessible, sovereign states often face the challenge of governing and regulating data.
- **Growth of Data is Exponential:** Data is growing faster than ever. More than 1.7 megabytes of new data is created every second.
- **Fragmented rules:** In India, there are a fragmented set of rules and vague redressal procedures.
 - **For example-** Information Technology Act, 2000 ("Act") and relevant rules formulated under the act, Payment and Settlement Systems Act, 2007, Indian Telegraph Act, 1885 and SEBI Data Sharing Policy, 2019 and RBI Guidelines on Cyber Security Framework for Banks and Information Security, 2016.
- **Ambiguity:** Regulatory ambiguity and inaction are very common and leads to huge losses.
- **Lack of awareness:** Lack of awareness on the importance and impact of personal data may be called into question only after such primary reasons are addressed.

◎ CONCLUSION

- The past decade's data explosion created a virtuous circle of data analysis and action, leading to new insights, data creation, and data analysis.
- Thus, it is indeed crucial to respect the need for a reasonable timeline for the introduction and enforcement of data regulation.

RUSSIA AND CHINA IN THE RACE OF HYPERSONIC TECHNOLOGIES, WHERE DOES INDIA STAND?

CONTEXT:

Recently, it has been reported that China tested a nuclear-capable hypersonic glide vehicle that circled the globe before speeding towards its target.

- ❑ Several countries, including the US, Russia and China, are developing hypersonic missiles which travel at a speed five times that of sound.
- ❑ Though slower than ballistic missiles, they are harder to intercept and can be manoeuvred.

◎ BACKGROUND

- A new global arms race is brewing up as US, China and Russia are all pursuing hypersonic weapons technologies.
- The US administration is making a big push for hypersonic-related research funding in the fiscal year 2022 budget and has requested \$3.8 billion in budget.
- China, apart from enhancing its military capabilities, has also been pursuing the development of hypersonic capabilities for a decade now.
- Similarly, Russia is also developing hypersonic weapons technology and has recently tested a hypersonic cruise missile – Zircon.
- **14-X** – hypersonic glide vehicle mounted on a VSB-30 rocket by Brazil.
- **BrahMos-II** – Hypersonic missile by India and Russia.
- **Hypersonic Technology Demonstrator Vehicle** – Hypersonic scramjet demonstration by India.
- **High-Speed Strike Weapon** – Boeing X-51 based missile by the United States.
- **Kh-90** – Hypersonic air-to-surface cruise missile. Developed in 1990 by the Soviet Union/ Russia.
- **DF-ZF** – DF-17 mounted hypersonic glide vehicle by China.

◎ ANALYSIS

What is Hypersonic Missile?

- An unmanned scramjet demonstration aircraft. This is designed to travel at a speed exceeding 3,800 miles per hour. The hypersonic missile speed is much more than other cruise and ballistic missiles.
- These are considered to have a combination of cruise missile's manoeuvring capabilities and ballistic missile's speed. Unlike traditional missile's tech, HSTDVs are hard to track due to their speed.
- In future, these can be used for low-cost launching of satellites and cruise missiles of low-range. Other than these, there are other civilian applications of HSTDV.

What is Hypersonic Cruise Missile?

The hypersonic cruise missile, running at five times more speed than the speed of sound, is presently the fastest missile in the world.

Following are some of the Hypersonic Cruise Missile:

- **3M22 Zircon** – Hypersonic anti-ship cruise missile

Which countries have Hypersonic Missiles?

Before India successfully test-fired the missile, the US, Russia and China were the hypersonic technology countries. Now India has also become a part of these hypersonic technology countries.

What are the causes behind this new arms race?

- **US withdrawal from treaties –**
 - **INF Treaty:** The United States withdrew from the Intermediate-range Nuclear Forces (INF) treaty in 2019. This treaty had been in place since the Cold War. It banned both the Soviet Union (Russia) and the US from developing and deploying land-based cruise and ballistic missiles with ranges between 500 and 5,500 km. However, treaty did not apply to air-or sea-launched missiles. Russia also suspended its participation in the treaty.
 - **ABM Treaty:** Since the US withdrawal from the Anti-Ballistic Missile (ABM) treaty in 2002, both Russia and China have been wary of Washington's Ballistic Missile Defence (BMD) programme. The treaty, barred Washington and Moscow from deploying nationwide defenses against strategic ballistic missiles.

- ▶ **JCPOA:** Since the US' withdrawal from the Joint Comprehensive Plan of Action (JCPOA), tensions between the US and Iran are at an all-time high. Iran has breached the agreement terms multiple times since then, and announced that it would no longer be bound by any operational limitations of the JCPOA,
- **US-China conflict:** US-China conflict has escalated over the years. One of its facets was the recent trade war between the two economies. The race for global supremacy and mutual distrust often permeates into military domain, leading to the development of weapon systems. China is concerned that U.S. hypersonic weapons could enable the United States to conduct a preemptive, decapitating strike on China's nuclear arsenal and supporting infrastructure. U.S. missile defense deployments could then limit China's ability to conduct a retaliatory strike against the United States.
- **Russia – US conflict:** Though **Russian research on hypersonic technology** dates back to the 1980s, the program began to pick up momentum after the U.S. withdrew from the Anti-Ballistic Missile (ABM) Treaty in 2002. President Vladimir Putin has identified this as a key reason for Russian development of hypersonics.
- **China & Russia's view of US BMD:** A robust Ballistic Missile Defence (BMD) compromises the second strike capability of the enemy by neutralising the surviving incoming missiles in case of a near-decapitating first strike. Both Russia and China thus view the US BMD as undermining their deterrence and have sought ways to restore their retaliatory strike capability by investing in new technologies. These mostly include the hypersonic weapons systems, including Hypersonic Glide Vehicles (HGVs) that can escape the missile defence systems.
- **Anti-Satellite (ASAT) weapons:** Russia recently conducted an ASAT test. India had conducted similar ASAT test under **Mission Shakti** in 2019. There are approximately two dozen countries that possess ballistic missiles or satellite launch capability that can jeopardize human access to space. An indiscriminate development of ASAT systems can be a precursor to a new age space arms race.

Why China's testing of nuclear-capable hypersonics is being compared to the Sputnik moment?

- The launch of Sputnik by the Soviet Union in 1957 was viewed as a symbol of American weakness and a sign of Soviet superiority in technology, both by the people and policymakers in the US. The shock was worsened by the suddenness of the event, with US intelligence agencies being taken by complete surprise.
- China's testing of its nuclear-capable hypersonic weapons system is likely to trigger events similar to those that the Sputnik launch set in motion.
- The launch of Sputnik, triggered a ballistic missile race that saw Russia and the USA come close to a disastrous faceoff during the Cuban missile crisis.
- The Chinese tests have the potential to set off a similar aggressive competition among the nuclear powers to modernise their nuclear arsenals and add new, potentially destabilising capabilities to their arsenal.

How development of hypersonics by global powers will change global strategic scenario?

- **Shrinking the "time to target" window:** Hypersonics offer the unprecedented potential to lessen the "time to target" window since at their minimum speeds, they are at least 6 times faster than conventional cruise missile systems.
- **Increased access to targets:** Hypersonics also present the ability to reduce the entire globe to the "theatre", bringing it within access and ensuring that every adversary can potentially be perceived as a bordering territory.
- **Enhancing ISR Capabilities:** Once hypersonic weapons are fielded, the lessons from their operations could also be translated into intelligence, surveillance, and reconnaissance (ISR) operations, giving nations the ability to perhaps someday reach an area of interest faster than a satellite could be repositioned, and overflying contested airspace with a great degree of survivability.
- **Reducing adversaries' opportunities:** Hypersonics can cripple a target's decision-making window, effectively enabling the hypersonic attacker to get inside an adversary's command, control, and battle management cycle with swiftness and precision.
- **Nullifying air-defenses and detection:** Not only are Hypersonic targets are '10 to 20 times dimmer' than what the countries normally track by satellites in geostationary orbit.
- **Extensive Manoeuvrability:** The characteristics that Hypersonics possess provide them the potential to challenge detection and defense due to their speed, maneuverability, and low altitude of flight.
- **Accentuating the Battle space:** Hypersonics can also present the opportunity for the creation of a

more cohesive, strategic military culture and battle space strategies.

- **Precursor to Advanced Space Capability:** As the first and foundational, stage of a two stage vehicle for rapid access to space as a precursor to space-defense capabilities.

What are the implications?

- **Action-reaction cycle:**

- ▶ Experts consider the hypersonic weapons highly destabilising, due to their stealth and exceptional manoeuvrability. The US is already developing conventional long-range hypersonic missiles.
- ▶ With the Chinese test, the US may be forced to expand its hypersonic programme and further modernise its missile defence systems. This proliferates an action-reaction cycle wherein countries start building their weapon capabilities as a reaction to enemy state's weapon development programme.

- **Impact on India:**

- ▶ India may also be forced to accelerate its hypersonic missiles programme and consider

erecting an equally robust missile defence. India is reportedly developing a dual-capable hypersonic cruise missile and an anti-ship hypersonic missile.

- ▶ Chinese advancement in stealth technologies will push New Delhi to seek similar capabilities and development of effective countermeasures. This can then set off a regional arms race, a sign that is not particularly encouraging for regional peace.

- **Drain of resources:**

- ▶ Even as the pandemic devastated lives and economies around the world, spending on nuclear weapon by the world's nine nuclear states witnessed an increase of \$1.4bn from the previous year.
- ▶ This is a massive drain on public resources globally.

What is the way forward?

In order to prevent militarisation of space, there is an urgent case for a strict international ASAT non-proliferation and test-ban treaty to prevent militarisation of space.

FROM “PHASE-UP” TO “PHASE-DOWN” OF COAL

CONTEXT:

India (backed by China), made a last-minute diplomatic push at the Cop26 climate talks in Glasgow to water down the language of the final agreement from calling for a “phaseout” of unabated coal power to a “phasedown”.

Phasedown

The term “phasedown” means India can decrease its share of coal in the energy mix but allow its coal use to rise in absolute terms

◎ BACKGROUND

- The **Glasgow Climate Pact**, which documents the outcomes of negotiations at COP26, calls upon nearly 200 nations to accelerate “efforts towards the phase-down of unabated coal power and phase-out of inefficient fossil fuel subsidies,” among others.
 - ▶ The COP is the UN’s flagship climate summit.
 - ▶ It has of late become the occasion where member countries negotiate both national and multilateral climate targets and implementation.

Promises made by India at COP26

- India will bring its non-fossil energy capacity to 500 GW by 2030.
- India will bring its economy’s carbon intensity down to 45 per cent by 2030.
- India will install 552 GW renewable energy (solar, wind, nuclear) by 2030, which would be roughly 70% of all electricity generated in India.
- India will reduce 1 billion tonnes of carbon emissions from the total projected emissions by 2030.

Analysis

Assessing coal’s share in India’s ‘energy-mix’

- Currently, coal powers most of India: it accounts for nearly 70% of the country’s electricity generation.
- India is the second-largest producer and importer of coal in the world.
- Domestic electricity demand is predicted to double by 2040. India’s installed capacity at present is a little shy of 400GW, of which coal, or thermal power, makes up more than 200GW.
- India is now aiming to have an installed renewable

energy capacity of 500GW by 2030 — an enhancement of its initial pledge — and ensure that half of its energy supply comes from non-fossil fuel sources by the end of this decade.

- Renewable sources, including hydel power, make up for about 150GW of domestic capacity at present.

India produces over 85 minerals including coal, lignite, bauxite, chromite, copper ore and concentrates, iron ore, lead and zinc concentrates, manganese ore, silver, diamond, limestone, phosphorite etc.

Status of coal usage worldwide

- Since 2000, the world has doubled its coal-fired power capacity to around 2,045GW.
- Mainland China leads the world on the number of coal-fired plants and has more than 1,000 operational plants, nearly four-times higher than India, the country with the second-highest number of coal plants.
- The US is third on the list, which is rounded off by Japan and Russia, in that order.

Thus, not only developing countries, even advanced nations are dependent on coal power to meet their energy needs.

Why this transition would be difficult?

- **Power need:** Coal is used to meet over 70% of India’s electricity needs.
- **Heavy dependency:** 266 districts in the country have at least one asset linked to the coal sector, such as a coal mine, thermal power plant, sponge iron plant or steel plant. Of these, 135 districts have two or more assets dependent on coal.
 - ▶ The states that are most vulnerable to the impact of a coal phaseout include West Bengal, Jharkhand, Chhattisgarh, Odisha, and Madhya Pradesh, and parts of Uttar Pradesh, Telangana, Maharashtra, and Andhra Pradesh.

- **Employment generating sector:** A large proportion (about 70 per cent) of contract/informal labour involved in coal and coal-dependent sectors (such as power, iron and steel and brick manufacturing)
- **National policies not aligned with the goal:** The national policies and growth plans for coal dependent sectors that don't necessarily align with India's commitment to phase down coal

Why coal is becoming a huge concern?

- **CO2 emission:** India's coal-based thermal power sector is one of the country's biggest emitters of carbon dioxide (CO2).

India produces 1.8 metric tonnes of carbon emissions per capita against 15.2 metric tonnes produced by the U.S. High-income countries in general emit over 50 times as much carbon as low-income countries and over six times as much carbon as lower middle-income countries.

- **GHG emission:** It spews out 1.1 gigatonne of CO2 every year; this is 2.5 per cent of global GHG emissions, one-third of India's GHG emissions, and around 50 percent of India's fuel-related CO2 emissions.
- **Ash content:** Indian coal is known to contain 30-50% ash, meaning that for every two units of coal burned, one unit of ash could be produced.
- **Danger to public health:** Besides the creation of poisonous landfills in the ground, the burning of poor quality coal increases carbon emissions and air pollution, a danger to public health.
- **Adverse effect on vulnerable section:** Coal mining continues to have, many adverse effects on India's people, although vulnerable and marginalised communities have borne the brunt.
 - **For example-** In Chhattisgarh, tribal communities have been resisting coal-mining in **Hasdeo Aranya** but the Centre accorded permits for mining in yet another section of the forests last month.
- and modernisation policies need to play a key role in maintaining the efficiency of India's coal fleet.
- India has one of the youngest coal fleets in the world, with around 64 per cent of the capacity (132 GW) less than a decade old.
- Maintaining efficiency of this large fleet will be crucial as it is going to be operational for at least the next 15-20 years.
- **Propagate biomass co-firing:** Biomass co-firing is a cost-effective method for decarbonising a coal fleet.
 - Only one plant currently co-fires biomass in India.
 - India is a country where biomass is usually burnt on the field — this reflects apathy towards resolving the problem of clean coal using a very simple solution that is readily available.
- **Invest in carbon capture and storage (CCS):** Businesses should invest in indigenous research and development to bring down the costs of CCS.
- **Bring back coal beneficiation:** This is another missed opportunity on which the government needs a course correction. Coal beneficiation, or coal preparation refers to the processes through which inorganic impurities are separated from raw mined coal, thereby providing improved combustion characteristics to the fuel produced.
- **Developing alternate employment source:** The coal industry is a vital source of livelihood for millions in India. Thus, there is need to explore incentivising alternate sources of income, such as tourism, which will require some state and national investments.

Conclusion

- Coal being the cheapest and most reliable way to meet energy needs, is likely to make it difficult for India to reduce its consumption. Moreover, the future of the target lies in an effective approach towards reining in carbon emissions.
- While India has committed to stepping up on renewables, it needs to set up the infrastructure to maximise on clean energy requires vast investments.

What needs to be done?

- **Efficient innovation:** The government's renovation

GLOBAL AGREEMENT ON ETHICS OF ARTIFICIAL INTELLIGENCE

CONTEXT

The United Nations adopted a historical text defining the common values and principles needed to ensure the healthy development of artificial intelligence.

◎ BACKGROUND

- The agreement was adopted at the **41st session of the UNESCO General Conference**, showing renewed cooperation on the ethics of artificial intelligence.
- The agreement is called the **Recommendation on the Ethics of Artificial Intelligence**.
- It approaches AI ethics as a systematic normative reflection, based on a holistic and evolving framework of interdependent values, principles, and actions that can guide societies in dealing responsibly with the known and unknown impacts of artificial technologies on human beings, societies, and the environment, and offers them a basis to accept or reject artificial intelligence technologies.

◎ ANALYSIS

What is Artificial Intelligence?

- Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems.

What are AI Ethics?

- AI ethics is a system of moral principles and techniques intended to inform the development and responsible use of artificial intelligence technology.
- As AI has become integral to products and services, organizations are starting to develop AI codes of ethics.

Why are AI ethics important?

- AI is a technology designed by humans to replicate, augment or replace human intelligence.
- These tools typically rely on large volumes of various types of data to develop insights. Poorly designed projects built on data that are faulty, inadequate or biased can have unintended, potentially harmful, consequences.
- Moreover, the rapid advancement in algorithmic systems means that in some cases it is not clear to

us how the AI reached its conclusions, so we are essentially relying on systems we can't explain to make decisions that could affect society.

- An AI ethics framework is important because it shines a light on the risks and benefits of AI tools and establishes guidelines for its responsible use.

What are the ethical challenges of AI?

Enterprises face several ethical challenges in their use of AI technology.

• Explainability :

- ▶ When AI systems go awry, teams need to be able to trace through a complex chain of algorithmic systems and data processes to find out why.
- ▶ Organizations using AI should be able to explain the source data, resulting data, what their algorithms do and why they are doing that.
- ▶ "AI needs to have a strong degree of traceability to ensure that if harms arise, they can be traced back to the cause," said Adam Wisniewski, CTO and co-founder of AI Clearing.

• Responsibility :

- ▶ Society is still sorting out responsibility when decisions made by AI systems have catastrophic consequences, including loss of capital, health or life.
- ▶ Responsibility for the consequences of AI-based decisions needs to be sorted out in a process that includes lawyers, regulators and citizens.
- ▶ One challenge is finding the appropriate balance in cases where an AI system may be safer than the human activity it is duplicating but still causes problems, such as weighing the merits of autonomous driving systems that cause fatalities but far fewer than people do.
- **Fairness:** In data sets involving personally identifiable information, it is extremely important to ensure that there are no biases in terms of race, gender or ethnicity.
- **Misuse :**

- ▶ AI algorithms may be used for purposes other than those for which they were created.
- ▶ Wisniewski said these scenarios should be analyzed at the design stage to minimize the risks and introduce safety measures to reduce the adverse effects in such cases.

What is an AI code of ethics?

A proactive approach to ensuring ethical AI requires addressing three key areas :

● Policy :

- ▶ This includes developing the appropriate framework for driving standardization and establishing regulations. Example Asilomar AI Principles.
- ▶ Ethical AI policies also need to address how to deal with legal issues when something goes wrong.
- ▶ Companies may incorporate AI policies into their own code of conduct.

● Education :

- ▶ Executives, data scientists, front-line employees and consumers all need to understand policies, key considerations and potential negative impacts of unethical AI and fake data.

● Technology :

- ▶ Executives also need to architect AI systems to automatically detect fake data and unethical behavior.
- ▶ This requires not just looking at a company's own AI but vetting suppliers and partners for the malicious use of AI.
- ▶ Examples include the deployment of deep fake videos and text to undermine a competitor, or the use of AI to launch sophisticated cyberattacks.
- ▶ To combat this potential snowball effect, organizations need to invest in defensive measures rooted in open, transparent and trusted AI infrastructure.

◎ CONCLUSION

The world needs rules for artificial intelligence to benefit humanity. The Recommendation on the ethics of AI is a major answer. It sets the first global normative framework while giving States the responsibility to apply it at their level. UNESCO will support its 193 Member States in its implementation and ask them to report regularly on their progress and practices.

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GOVERNOR'S POWER TO DECIDE ON BILLS: VETO POWER

◎ CONTEXT:

Recently, the speaker of Tamil Nadu assembly called for setting a binding timeframe within which Bills should be assented to or returned or reserved for the consideration of the President of India by the governors.

About

■ Who is a Governor?

- The Governor is the head of a state just like the President is the head of the republic.
- The Governor is the nominal head of a state, while the Chief Minister is the executive head.
- All executive actions of the state are taken in the name of the Governor.
- However, in reality he merely gives his consent to the various executive actions. He or she is devoid of taking any major decisions.
- The real powers in the executive dealings of a state rest with the Chief Minister and the Council of Ministers.
- **Tenure:** A governor of a state in India holds office for a period of five years, but it is subject to termination.
- **One Governor, more states:** According to an amendment in the Constitution of India, brought about in 1956, the same person can be the Governor of two or more states.

Eligibility Criteria

- He or she must be a citizen of India.
- He or she must have completed 35 years of age.
- He or she must not hold any other office of profit.
- He or she must not be a member of the Legislature of the Union or of any other state.

What about administration of UTs?

- Apart from the governors in the states, Lieutenant governors are appointed in Union Territories of Delhi, Andaman Nicobar Island and Puducherry.
- All other union-territories are governed by an **Administrative Head (an IAS officer)**.
- The only exception is Chandigarh. The governor of Punjab is also the lieutenant governor of Chandigarh.
- The powers of the Lieutenant Governor of a union-territory are equivalent to the powers of a Governor of a state in India.
- Both are appointed by the President of India for a term of 5 years.

Veto Power with regard to Ordinary Bill

- Every ordinary bill, after it is passed by the legislative assembly in case of a unicameral

legislature or by both the Legislative Assembly and Legislative Council in case of a bicameral legislature, is presented to the governor for his assent. In this case Governor has four alternatives -

- He may give his assent to the bill, the bill then becomes an act.
- He may withhold his assent to the bill, the bill then ends and does not become an act (Absolute Veto).
- He may return the bill for reconsideration of the House or Houses. If the bill is passed by the House or Houses again with or without amendments and presented to the governor for his assent, the governor must give his assent to the bill. Thus, the governor enjoys only a 'suspensive veto'.
- He may reserve the bill for the consideration of the President.

When the governor reserves a bill for the consideration of the President, he will not have any further role in the enactment of the bill and now the power of consideration of the Bill rests solely with the President and Governor has nothing to do with it.

Veto Power with regard to Money Bill

Every money bill, after it is passed by the state legislature (SLA or SLA&SLC), is presented to the governor for his assent.

In this case Governor has three options -

- He may give his assent to the bill, the bill then becomes an act.
- He may withhold his assent to the bill, the bill then ends and does not become an act.
- He may reserve the bill for the consideration of the president.
- He cannot send the Bill back to the SLA for reconsideration and he normally accords his assent to the Money Bill as it is introduced with his prior consent.

If the Governor reserves the Money Bill for the consideration of the President his role ends.

NITI AAYOG LAUNCHES SDG URBAN INDEX & DASHBOARD 2021-22

◎ **CONTEXT:** Niti Aayog has released its inaugural 'SDG Urban Index & Dashboard 2021-22'.

About the Index

- The index is a result of the collaborative efforts of Niti Aayog-Giz & BMZ, under the **Indo-German development cooperation**.
- It is an attempt to localize sustainable development goals (SDG) & ensure progress at national, state, union territory and local levels.
- The index ranks 56 urban areas on 77 SDG indicators, across 46 targets of the SDG framework.
- **Source of data:** The data is sourced from official sources like National Family Health Survey, National Crime Records Bureau, Unified District Info System for Education, various ministries & other government data sources.

Key-findings of the Index

- **Top 10 Urban areas:** Shimla, Coimbatore, Chandigarh, Thiruvananthapuram, Kochi, Panaji, Pune, Tiruchirapalli, Ahmedabad, and Nagpur.

- **Population:** Out of 56 urban areas ranked in the index, 44 are with population of above one million, 12 are state capitals with a population of less than a million.

SDG Framework

- SDG framework was first released in United Nations in 2015, with 17 SDG goals that include no poverty, zero hunger, gender equality & clean water and sanitation.
- For each SDG, the urban areas are ranked on a scale of 0-100.

ONE DAY NATIONAL CONFERENCE ON PESA ACT, 1996 TO CELEBRATE 25TH YEARS OF THE ACT

◎ CONTEXT:

One Day National Conference was organized on the Provisions of the Panchayats (Extension to the Scheduled Areas) Act, 1996 (PESA) to celebrate the 25th year of PESA Act, as part of Azadi Ka Amrit Mahotsav.

About

■ What is PESA Act, 1996?

- **The Panchayats (Extension to Scheduled Areas) Act, 1996** or PESA Act is a law enacted by the Government of India for ensuring self-governance through traditional Gram Sabhas for people living in the Scheduled Areas of India.
 - ▶ It was enacted by Parliament in **1996** and came into force on **24th December 1996**.
 - ▶ The PESA is considered to be the **backbone of tribal legislation in India**.
 - ▶ PESA recognises the traditional system of the **decision-making process and stands for the peoples' self-governance**.

Background

- To promote local self-governance in rural India, the **73rd constitutional amendment** was made in 1992. Through this amendment, a **three-tier Panchayati Raj Institution** was made into a law.
 - However, its application to the scheduled and tribal areas under **Article 243(M)** was **restricted**.
 - After the **Bhuria Committee recommendations in 1995**, **Panchayat Extension to Scheduled Areas (PESA) Act 1996** came into existence for ensuring tribal self-rule for people living in scheduled areas of India.
 - The PESA conferred the absolute powers to **Gram Sabha**, whereas state legislature has given an advisory role to ensure the proper functioning of **Panchayats and Gram Sabhas**.
 - The power delegated to Gram Sabha cannot be curtailed by a higher level, and there shall be independence throughout.

Issues Related to PESA

- **Partial implementation:** The state governments are supposed to enact state laws for their Scheduled Areas in consonance with this national law. This has resulted in the partially implemented PESA.

- **The partial implementation** has worsened self-governance in **Adivasi areas, like in Jharkhand.**
- Many experts have asserted that PESA did not deliver due to the **lack of clarity, legal infirmity, bureaucratic apathy, absence of a political will, resistance to change in the hierarchy of power, and so on.**
- As per Social audits conducted across the state, in reality different developmental schemes were being **approved on paper by Gram Sabha**, without actually having any meeting for discussion and decision making.

THE GLOBAL STATE OF DEMOCRACY REPORT 2021 - BUILDING RESILIENCE IN A PANDEMIC ERA

◎ CONTEXT:

Democracy is deteriorating across the world, with countries notably taking undemocratic and unnecessary actions to contain the coronavirus pandemic, as per The Global State of Democracy Report 2021.

About the Report

- The report, titled Global State of Democracy 2021, is published by the International Institute for Democracy and Electoral Assistance (IDEA).
- The report is based on events that have impacted the global democratic governance since the start of the pandemic.
- The information for the analysis was collected from various sources, including from two of International Institute for Democracy and Electoral Assistance indices.
 - **The international organisation's Global Monitor** provides data on measures taken on the coronavirus pandemic in 165 countries.
 - **The Global State of Democracy** has data on democratic quality for the same countries, based on 28 aspects of democracy up until the end of 2020.
- Both data sources are developed around a conceptual framework, which defines democracy as based on five core attributes:
 - Representative Government
 - Fundamental Rights
 - Checks on Government
 - Impartial Administration
 - Participatory Engagement
- These five attributes provide the organizing structure for this report.

Key-findings of the Index

- 20 countries were moving towards authoritarianism and seven nations were heading towards democracy.
- These "negative trends" had become more serious and added to concerns with the onset of the Covid-19 pandemic.
- Over the past two years, some countries, particularly Hungary, India, the Philippines and the USA, have seen a number of democratic attributes affected by measures that amount to democratic violations – that is, measures that were disproportionate, illegal, indefinite or unconnected to the nature of the emergency".

- As much as 70% of the world's population lives either in non-democratic regimes or in **"democratically backsliding"** countries, the report noted, adding that only 9% of the population was living in high-performing democracies.

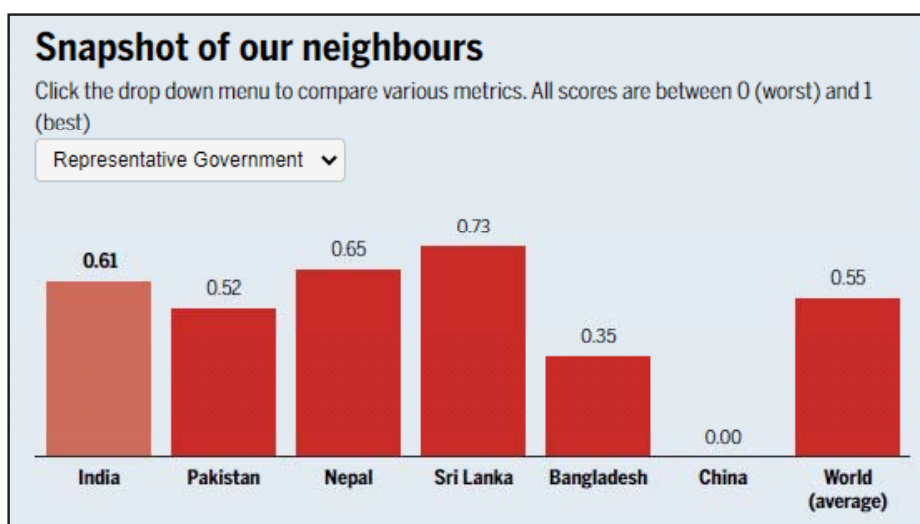
Democratic backsliding

- The report defined "democratic backsliding" as the "sustained and deliberate process of subversion of basic democratic tenets by political actors and governments".

What the report says about India?

- Among all countries, most democratic violations during the pandemic took place in India. These included
 - harassment, arrests and prosecution of human rights activists, journalists, students, academics and those critical of the government and its policies
 - excessive use of force to enforce Covid-19 regulation
 - harassment of Muslim minorities
 - internet shutdowns and lockdowns, especially in Kashmir
- India imposed the highest number of internet shutdowns last year.
 - Another report, released by digital rights and privacy organisation Access Now in March had also noted that last year, India had the highest number of internet shutdowns – 109 out of the total 155 globally.

In 2021, India fell to the 53rd position in the Economist Intelligence Unit's Democracy Index, which ranks the country as a "flawed democracy".



What are the actual issues in India?

At present, the Indian democracy is facing the given issues:

- Individual liberties are being subordinated systematically
- Institutions are not functioning autonomously but acting more or less as components of the executive

- The regime has little patience with popular protests
- Parliament's function of oversight has been systematically side-lined
- The federal structure is routinely undermined in the arenas of governance and competitive politics
- Constitutional protections and, more generally, the spirit of the Constitution are easily violated in practice

What needs to be done?

- Accurate analysis of the current situation
- Continuous support for democracy
- Promotion of people's participation
- Global leadership and solidarity from democratic states are urgently needed.
- Removing dominant or negative actors
- Strengthening of institutions

THE PROCESS OF REPEALING A LAW

◎ CONTEXT:

Prime Minister Narendra Modi finally announced the repeal of three contentious farm laws, assuring farmer groups protesting against these laws that the legislative procedure for repeal would be completed in the forthcoming Winter Session of Parliament.

- However, these laws can be only repealed through the proper constitutional Parliament process, by Parliament alone.

About

• Parliament's power to repeal a law

- Under Article 245 of the Indian Constitution, Parliament is vested with powers to both pass and annul laws.
- If Parliament is in recess, the government can repeal or enact laws by bringing an ordinance, which needs to be ratified by the House later.
- The power of Parliament to repeal a law is derived from the same provision of the Indian Constitution that governs the legislative prerogative of statute enactment.
- Legislation can also include a "sunset" clause, which states that a law will no longer be in effect after a certain date unless further legislative action is taken to extend the law.
 - For example, the Terrorist and Disruptive Activities (Prevention) Act 1987, also known as TADA, had a sunset clause and was allowed to expire in 1995.
- If a law does not have a sunset clause, Parliament must pass new legislation to repeal it.

Repeal

"Repeal means to revoke, abrogate, or cancel particularly a statute," according to a 'Reference Note' prepared by the Lok Sabha Secretariat in 2016, and "any statute may repeal any Act in whole or in part, either expressly or implicitly, by enacting matter contrary to and inconsistent with the prior legislation."

- The process for repealing a law
- Laws can be repealed in two ways — either through **an ordinance, or through legislation.**

Ordinance

- In case an ordinance is used, it would need to be replaced by a law passed by Parliament within **six months.**
- If the ordinance lapses because it is not approved by Parliament, the repealed law can be revived.

Legislation

- **In case of legislation,** it will have to be passed by **both Houses of Parliament,** and **receive the President's assent** before it comes into effect.

Background

- The three laws are:
 - Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020
 - Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020
 - Essential Commodities (Amendment) Act, 2020
- These three laws were at the centre of protests by farmers for the past year.

How many laws have been repealed?

- The Repealing and Amending provision was last used in 2019, when the Union government attempted to repeal 58 outdated laws and make minor changes to the Income Tax Act of 1961 and the Indian Institutes of Management Act of 2017.
- Since 2014, 1,486 obsolete and unnecessary legislation have been repealed, according to Union Law Ministry.

TELANGANA'S RAMAPPA TEMPLE RECEIVES MASSIVE FOCUS AFTER UNESCO TAG

◎ CONTEXT:

Telangana's Ramappa temple, a 13th century architectural icon and an engineering marvel that earned the coveted UNESCO heritage tag recently, was the highlight of the presentation given by Telangana government officials at an ongoing tourism and culture ministers' conference in Bengaluru.

About the Ramappa Temple

- Named after its **architect, Ramappa,** the temple is also known as **Ramalingeswara Temple.**
- Situated in **Telangana's Warangal,** Ramappa temple stands on a **six-feet high star-shaped platform** with walls, pillars and ceilings adorned with intricate carvings that attest to the unique skill of the **Kakatiyan sculptors.**
 - The temple is known for the **bracket figures** which spring from outer pillars and are shown as supporting the roof projections.
- The temple is dedicated to **Lord Shiva,** where Lord Ramalingeswara is worshipped.
 - The temple's presiding deity is **Ramalingeswara Swamy.**

Important features of the temple

- The structure is of the pyramidal type, consisting of four storeys
- Decorated beams and pillars of carved granite and dolerite
- Distinctive and pyramidal Vimana (horizontally stepped tower) made of lightweight porous bricks called floating bricks that reduced the weight of the roof structures.
- The temple's sculptures are of high artistic quality and illustrate regional dance customs and the culture of **Kakatiyas**.

Construction

- The temple **was constructed in 1213 AD** during the reign of the **Kakatiya Empire**.
- It was constructed by **Recharla Rudra**, a general of **Kakatiya king Ganapati Deva**.
- At present, the temple falls under the protection of the **Kakatiya Heritage Trust (KHT)**, which has been pushing it for the **World Heritage tag since 2012**.

About kakatiya dynasty

- **The 12th and the 13th centuries** saw the emergence of the **Kakatiyas**.
- They were at first the feudatories of the **Western Chalukyas of Kalyana**, ruling over a small territory near Warangal.
- The dynasty saw powerful leaders like **Ganapathi Deva and Rudramadevi**.
- **Prataparudra I**, also known as **Kakatiya Rudradeva**, was the son of the **Kakatiya leader Prola II**.
 - It was under his rule that the Kakatiyas declared sovereignty. He ruled the kingdom till **1195 A.D.**
- It was under the rule of **Prataparudra I** that **usage of Telugu language** in inscriptions began.
- Before the establishment of Orugallu/Warangal as the capital, Hanamakonda was the first capital of the Kakatiyas.
- **The great Italian traveller Marco Polo** visited the Kakatiya Kingdom sometime during **Rudramadevi's tenure** as the ruler of the Kakatiya Dynasty and made note of her administrative style; admiring her extensively.

'DOSTI': TRILATERAL COAST GUARD EXERCISE BY INDIA, THE MALDIVES AND SRI LANKA

◎ CONTEXT:

India, Maldives and Sri Lanka are holding the 15th edition of the biennial trilateral coast guard exercise 'Dosti', in Maldives.

About the trilateral exercise

- The Exercise began primarily in 1991 as a bilateral engagement, involving only Indian and Maldives Coast Guards.
 - Sri Lanka joined in 2012 to make it a trilateral exercise.
- The aim of India-Maldives-Sri Lanka tri-lateral exercise 'Dosti' is to
 - further fortify the friendship
 - enhance mutual operational capability, and exercise interoperability

- to build cooperation between the Coast Guards of Maldives, India and Sri Lanka
- This exercise is significant for India because Maldives & Sri Lanka are of strategic importance to India & its maritime security interests.
- **Year 2021** marks the **30th year** of the **Dosti Trilateral Coast Guard Exercise**.

Key-focus areas of the Exercise

- The Exercises carried out over the past ten years have focused on **exercises and drills on providing assistance in sea accidents, eliminating sea pollution, and the Coast Guard's procedure and conduct during situations such as oil spills.**

Exercise between India and Sri Lanka	
MITRA SHAKTI	Military Exercise
SLINEX	Naval exercise

Exercise between India and Maldives	
Ekuverin	Military Exercise

US ANNOUNCES OIL RELEASE FROM STRATEGIC PETROLEUM RESERVE

◎ CONTEXT:

The Biden administration has asked some of the world's largest oil consuming nations - including China, India and Japan - to consider releasing crude stockpiles in a coordinated effort to lower global energy prices.

About

■ What is Strategic Petroleum Reserve?

- The Strategic Petroleum Reserve is an emergency stockpile to preserve access to oil in case of natural disasters, national security issues and other events.
- Maintained by the Energy Department, the reserves are stored in caverns created in salt domes along the Texas and Louisiana Gulf Coasts.
- The massive 60 underground salt domes or caverns are found at four different sites along the coastlines of Louisiana and Texas
 - ▶ The **Bryan Mound** site is just outside of Freeport, Texas
 - ▶ The **Big Hill** site is approximately 26 miles outside of Beaumont, Texas
 - ▶ The **West Hackberry** site is about half an hour from Lake Charles, Louisiana
 - ▶ The **Bayou Choctaw** site is about 10 minutes away from Baton Rouge, Louisiana

Origin of SPR

- The United States created the SPR in 1975 after the Arab oil embargo spiked gasoline prices and damaged the U.S. economy.
- Presidents have tapped the stockpile to calm oil markets during war or when hurricanes hit oil infrastructure along the U.S. Gulf of Mexico.

Strategic Petroleum Reserve

Government storage sites created in response to the 1973 Arab oil embargo to hold emergency supplies of crude oil:



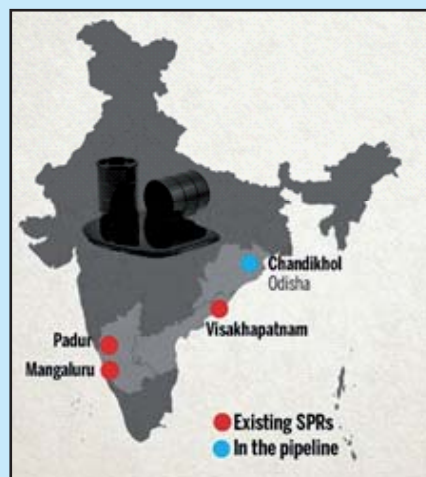
- Current Capacity of SPR
- The reserve currently holds about 606 million barrels in dozens of caverns in four heavily guarded locations on the Louisiana and Texas coasts. That's enough oil to meet U.S. demand for more than a month.
- The country also maintains small heating oil and gasoline reserves in the U.S. Northeast.

Which countries have SPR?

- Besides the United States, the other 29 member countries in the International Energy Agency, including the United Kingdom, Germany, Japan and Australia, are required to hold oil in emergency reserves equivalent to 90 days of net oil imports. Japan has one of the largest reserves after China and the United States.
- China, an associate member of the IEA and the world's second-leading oil consumer, created its SPR 15 years ago and held its first oil reserve auction in September.
- Another IEA associate member, India, the third-biggest oil importer and consumer, also maintains a reserve.
- Overall, OECD governments held more than 1.5 billion barrels of crude as of September.

Strategic petroleum reserves in India

- India has three strategic petroleum reserves with combined storage capacity of 5.33 million tonnes (about 38 million barrels), sufficient to meet country's crude oil requirements for about 9.5 days.
- The three operational crude oil storage facilities are located in
 - Vishakhapatnam (1.33 million tonnes)



- ▶ Mangalore (1.5 million tonnes)
- ▶ Padur (2.5 million tonnes)
- These facilities are operated by the State-run Indian Strategic Petroleum Reserve Limited.

HUMAN ACTIVITIES ALTERING GANGA BASIN: STUDY

◎ CONTEXT:

Human activities have had a disastrous impact on the Ganga river basin, ranging from severe pollution to changing its course, and are behind the landslides and floods seen in recent years, according to a new study.

About

■ The study

- For the study, researchers analysed the effects of past human activity on mountainous regions, focusing on **Bhagirathi** and **Alaknanda**.
 - ▶ These two major tributaries merge at **Devprayag** to form the **Ganga**, the lifeline of half a billion Indians.
- Researchers examined data on rainfall, water discharge in the rivers and sediment load from weather stations across the Upper Ganga Basin from 1971 to 2010.
- They analysed the data corresponding to two periods: pre-1995 and post-1995.
- What activity is responsible for this situation?
- **Anthropogenic activities** (activities driven by humans) have had disastrous impacts on Ganga, from severe pollution to changing its course.

What has been found?

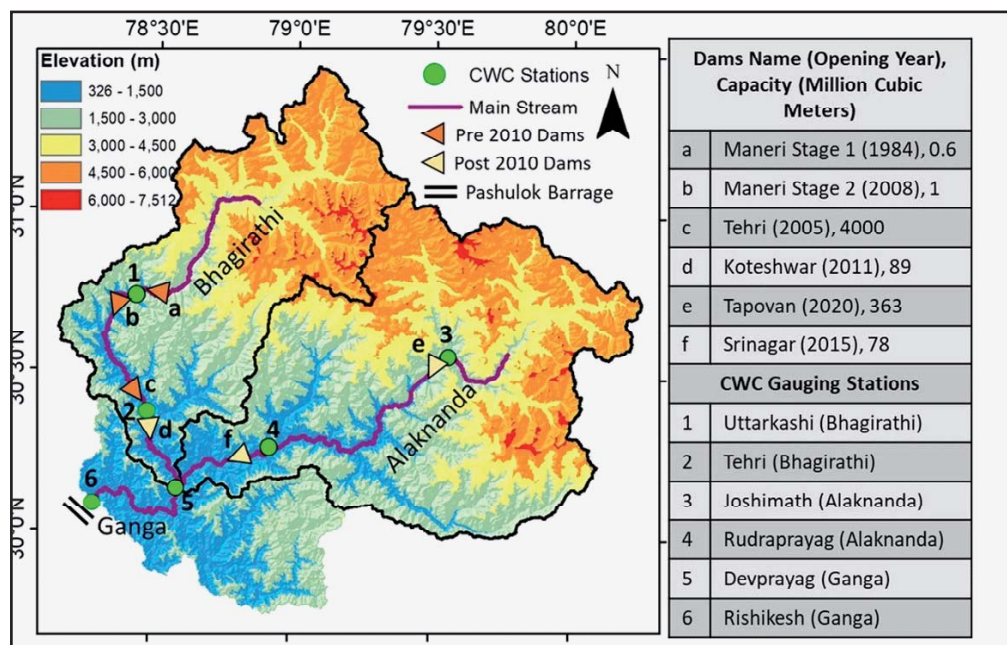
- Catastrophic landslides and floods in the Ganga basin have become more frequent in recent years.
- **Increasing number of flooding events:** Researchers found a steady increase in the number of flooding events in both river basins after 1995. The change in low flows and middle-level flows in Bhagirathi can be attributed to three major dams — **Maneri, Tehri, and Koteswar** — on the river.
- **Lack of sedimentation:** Building of dams in the **Alaknanda region** coupled with climate change have modified the water activity as dams and reservoirs have influenced the sediment transported by the rivers.
- **Alteration of river's morphology:** The lack of sedimentation in the downstream Ganga basin has altered the river's morphology.
- **Extreme flow:** The Alaknanda basin saw a doubling of water flow from 1995 to 2005 at Joshimath weather station, while also seeing an increase in the rate of flow of water, termed extreme flow.
- **Severe impact of ecological process:** The Himalayan regions are one of the worst affected by climate change in India, meanwhile increasing numbers of dams

and reservoirs on these freshwater sources has severely impacted the ecological processes in the **Himalayan River basins**.

Indian Himalayan Region

- The Indian Himalayan Region includes most parts of the north-eastern states and hill areas of West Bengal.
- The large rivers emerging from the IHR are the **Ganga, Brahmaputra, Barak (in the Meghna basin) and Indus**.
- These rivers are joined by many tributaries from the Himalayan region, especially from Bhutan and Nepal.

- Tehri dam plays a crucial role in the upper Ganga basin region. Being a large reservoir and flow control structure, it blocks sediment flow from upstream and controls the volume of water that flows downstream.



The Ganga River Basin

- The Ganges River originates in the Himalaya Mountains at **Gomukh**, the terminus of the Gongotri Glacier.
- When the ice of this glacier melts, it forms the clear waters of the **Bhagirathi River**.
- As the Bhagirathi River flows down the Himalayas, it joins the **Alaknanda River**, officially forming the **Ganges River**.
- The Ganges River Basin is sometimes considered part of a larger river basin consisting of the nearby **Brahmaputra and Meghna rivers**.
- Known as the **Ganges-Brahmaputra-Meghna (GBM) River Basin**, it is one of the largest river systems in the world.

Structure of the Basin

- It crosses five states of India namely Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal.
- Major tributaries of River Ganga are Yamuna, Ramganga, Gomti, Ghaghara, Gandak, Damodar, Kosi and Kali-East

- Flowing through major cities/towns like Srinagar, Rishikesh, Haridwar, Roorkee (in Uttarakhand), Bijnor, Narora, Kannauj, Kanpur, Allahabad, Varanasi, Mirzapur (in Uttar Pradesh), Patna, Bhagalpur (in Bihar) and Beharapore, Serampore, Howrah and Kolkata (in West Bengal), it drains into the Bay of Bengal.

ONLY 2 CASES OF POLIOVIRUS IN 2021 SO FAR: WHO

◎ CONTEXT:

Cases of wild poliovirus continued to be on the decline across the world, according to the World Health Organization (WHO). Only two cases of the disease were detected early this year — one in Pakistan and Afghanistan each.

About

■ What is Polio?

- Poliomyelitis (polio) is a highly infectious viral disease that largely affects children under 5 years of age.
- **Transmission:** The virus is transmitted by person-to-person spread mainly through the faecal-oral route or, less frequently, by a common vehicle (e.g. contaminated water or food) and multiplies in the intestine, from where it can invade the nervous system and cause paralysis.
- **Types:** There are three wild-types of poliovirus that cause the disease:
 - Wild Poliovirus 1 (WP1)
 - Wild Poliovirus 2 (WP2)
 - Wild Poliovirus 3 (WP3)
- Out of the three, WPV-2 was interrupted successfully more than a decade ago.
- **Symptoms:** Fever, fatigue, headache, vomiting, stiffness in the neck, and pain in the limbs.

Polio in India

- On February 24, 2012, the World Health Organization removed India from the list of countries with active endemic wild poliovirus transmission.
- Two years later, the South-East Asia Region of the WHO, of which India is a part, was certified as polio-free.

Serious Symptoms of the disease

A smaller proportion of people (much less than one out of 100, or 1-5 out of 1000) with poliovirus infection will develop other, more serious symptoms that affect the brain and spinal cord:

- **Paresthesia** (feeling of pins and needles in the legs)
- **Meningitis** (infection of the covering of the spinal cord and/or brain) occurs in about 1 out of 25 people with poliovirus infection
- **Paralysis** (can't move parts of the body) or weakness in the arms, legs, or both, occurs in about 1 out of 200 people with poliovirus infection

SCIENTISTS CONFIRMS FASTEST SPINNING WHITE DWARF CONFIRMED

◎ **CONTEXT:** A team of astronomers at the University of Warwick recently confirmed the fastest spinning white dwarf named J0240+1952.

About

■ What is J0240+1952?

- The white dwarf named LAMOST J024048.51+195226.9 – or J0240+1952 for short is an extremely rare example of a magnetic propeller system.
- It has been found to complete a full rotation once every 25 seconds.
- It is the fastest spinning confirmed white dwarf.
- With such a record-breaking spin rate, the star is the second high-speed magnetic propeller.
- The star J0240+1952 is similar to Earth but is thought to be at least 200,000 times more massive.
- The data suggests that the star is part of the binary star system. Its immense gravity is pulling material in the form of plasma from its companion star.

■ What are white dwarf stars?

- White dwarf stars have medium to high mass and are the final evolutionary state of stars whose mass is not high enough to become a neutron star.
- White dwarf stars are stars that have burnt up all their energy and shed its outer layers and now are undergoing a cooling or shrinking process over million of years.
- The materials in a white dwarf star can no longer undergo fusion reactions, so the star has no source of energy.
- White dwarfs are the hot, dense remnants of long-dead stars. They are the stellar cores left behind after a star has exhausted its fuel supply and blown its bulk of gas and dust into space.
- These exotic objects mark the final stage of evolution for most stars in the universe – including our sun – and light the way to a deeper understanding of cosmic history.

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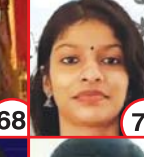
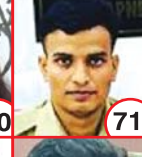











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