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GS 2 : Polity, Governance, International Relations

1. The Accessibility Standards could make our law enforcement more disabled-friendly

The Draft Accessibility Standards/Guidelines recently released by the Ministry of Home Affairs (MHA) for built infrastructure under its purview (police stations, prisons and disaster mitigation centres) and services associated with them assume significance.

provisions under the Standards

- **Models for police stations:** The Standards set out models for building new police stations as well as improving upon existing police stations and prisons that are modern, **gender sensitive** and accessible.
- The Standards speak to the need to **make the websites and institutional social networks of police stations accessible**, ensuring that persons with disabilities accused of committing any crimes are treated appropriately, having disabled-friendly entrances to police stations and disabled-friendly toilets.
- **Inclusive police force:** the Standards state that the police staff on civil duty could be persons with disabilities.
- **Equal protection during natural disasters:** Acknowledging that persons with disabilities must receive equal protection as others in such situations, the Standards provide direction on disability inclusion in disaster mitigation, preparedness, response and recovery efforts.
- They also stress on disability inclusive training for persons involved in disaster relief activities, data aggregation, use of **information and communication technology (ICT)** and enforcing accessible infrastructure models for schools, hospitals and shelters following the principle of universal design.
- **Accessibility norm:** The Standards introduce accessibility norms for services associated with police stations and prisons.
- These norms promote the use of ICTs to facilitate communication, development of police websites, **app-based services for filing complaints**, making enquiries, etc., as well as encouraging the use of sign language, communication systems such as Braille, **images for persons with psycho-social disabilities**, and other augmentative and alternative modes of communication.

Shortcomings of the Standards/norms

- **Accessibility of signage not ensured:** The Standards call for the deployment of **directional signage regarding accessibility features** in the MHA's physical infrastructure as well as to indicate the location of accessible toilets.
- However, they do not require that such signage itself be accessible to the visually challenged, such as through auditory means.
- **Certain accommodations merely recommendatory:** The Standards characterise several reasonable accommodations that are necessary for the disabled as **being merely recommendatory**.
- These include having trained police personnel in every police station to assist persons with disabilities and placing beepers at all entrances to enable the visually challenged/blind to locate themselves.
- **Lack of detail on human assistance:** In the case of Patan Jamal Vali, the Court suggested connecting special educators and interpreters with police stations to operationalise the reasonable accommodations embodied in the Criminal Law (Amendment) Act, 2013.
- While the standards do require developing a mechanism to provide human assistance to the disabled such as sign language interpreters, they are short on specifics on this count.
- **Lack of representation:** Interestingly, the Standards state that the police staff on civil duty could be persons with disabilities.
- This is inconsistent with the Office Memorandum issued by the Department of Empowerment for Persons with Disabilities on August 18, 2021, according to which the Centre has exempted posts in the Indian Police Service; the Delhi, Andaman and Nicobar Islands, Lakshdweep, Daman and Diu and Dadra and Nagar Haveli Police Service; as well as the Indian Railway Protection Force Service from the mandated 4% reservation for persons with disabilities in government jobs.

Conclusion

In sum, the Standards, when enacted into law, will mark a huge step forward in making our law enforcement apparatus more disabled-friendly. Bolstering the Standards further, by incorporating the suggestions flowing from well- thought-out public comments, will take us closer to the aim of ensuring that India's disabled citizens truly have the police they deserve.

2. Questioning the impartiality of the Election Commission

The “informal interaction” of the CEC and two other Election Commissioners with the Prime Minister’s Principal Secretary has raised questions about the neutrality of the Commission, especially when elections to crucial States are around the corner.

About Election Commission of India

- The ECI is a constitutional authority whose responsibilities and powers are prescribed in the Constitution of India under Article 324.
- In the performance of its functions, the Election Commission is insulated from executive interference.
- It is the Commission that decides the election schedules for the conduct of elections, whether general elections or by-elections.
- ECI decides on the location of polling stations, assignment of voters to the polling stations, location of counting centers, arrangements to be made in and around polling stations and counting centres and all allied matters.

Litigations against EC

- The decisions of the Commission can be challenged in the High Court and the Supreme Court of India by appropriate petitions.
- By long-standing convention and several judicial pronouncements, once the actual process of elections has started, the judiciary does not intervene in the actual conduct of the polls.

Issues with PMO meeting

- **Executive interference:** ECs are expected to maintain distance from the executive – a constitutional safeguard to insulate the commission from external pressure and allow it to continue as an independent authority.
- **Violating official channels:** The EC’s communication with the Government on election matters is through the bureaucracy – either with its administrative ministry – the Law Ministry or the Home Ministry.
- **Breach of protocol:** The Law Ministry spells the fine print on law for the country and is expected not to breach the constitutional safeguard provided to the commission to ensure its autonomy.

Recent incidence of criticisms

Ans. Partiality in Elections

- Over the last couple of years, several actions and omissions of the commission have come in for criticism.

- Nearly 66 former bureaucrats in a letter addressed to the President, expressed their concern over the working of the Election Commission.
- They felt was suffering from a credibility crisis, citing various violations of the model code of conduct during the 2019 Lok Sabha Elections.

Importance of ECI for India

- **Conduction of Election:** The ECI has been successfully conducting national as well as state elections since 1952.
- **Electoral participation:** In recent years, however, the Commission has started to play a more active role to ensure greater participation of people.
- **Discipline of political parties:** It had gone to the extent of disciplining the political parties with a threat of derecognizing if the parties failed in maintaining inner-party democracy.
- **Upholds federalism:** It upholds the values enshrined in the Constitution viz, equality, equity, impartiality, independence; and rule of law in superintendence, direction, and control over electoral governance.
- **Free and fair elections:** It conducts elections with the highest standard of credibility, freeness, fairness, transparency, integrity, accountability, autonomy and professionalism.

Issues with ECI

- **Flaws in the composition:** The Constitution doesn't prescribe qualifications for members of the EC. They are not debarred from future appointments after retiring or resigning.
- **No security of tenure:** Election commissioners aren't constitutionally protected with security of tenure.
- **Partisan role:** The EC has come under the scanner like never before, with increasing incidents of breach of the Model Code of Conduct in the 2019 general elections.
- **Political favor:** The opposition alleged that the ECI was favoring the ruling party by giving clean chit to the model code of conduct violations made by the PM.
- **Non-competence:** Increased violence and electoral malpractices under influence of money have resulted in political criminalization, which ECI is unable to arrest.

3. Risks of mandatory Iron Fortification

Many things have been said about the necessity for mandatory iron fortification of foods in India.

Iron fortification

- Iron fortification of food is a methodology utilized worldwide to address iron deficiency.
- A critical problem in some food fortification programs is the lack of bioavailability of iron compounds.

Why need iron fortification?

Ans. Prevalence of Anaemia

- Iron deficiency anaemia is due to insufficient iron.
- National Family Health Survey (NFHS)-5 provides insights into anaemia prevalence in the country, indicating that 57.2% of women ages 15 to 49 are anaemic, up from 49.7% in NFHS-4.
- Without enough iron, the body can't produce enough of a substance in red blood cells that enables them to carry oxygen (hemoglobin).
- Severe anemia during pregnancy increases your risk of premature birth, having a low birth weight baby and postpartum depression.
- Some studies also show an increased risk of infant death immediately before or after birth.

Concerns over iron fortification

Ans. Fear of diabetes and heart ailments

- Iron increases the risk for many non-communicable diseases like diabetes, hypertension and even high blood cholesterol.
- A US based survey shows that high ferritin level had a four-fold higher risk of having diabetes.
- The Comprehensive National Nutrition Survey of Indian adolescents to resulted in such scary outcomes.
- There was a clear and significant risk for each of these conditions as serum ferritin increased.

India's vulnerability

Ans. India is world capital of diabetes and hypertension

- No less than 50% of Indian children, aged 5-19 years, already had a biomarker of either high blood sugar or high blood lipids, even when thin or stunted.
- Thus, the risk of chronic disease is already very high in our children.
- Thus mandatory cereal fortification has severe hazards for India.

Why mandatory fortification is not a feasible option?

- **Occurrence of deficiencies:** We do not even know if anaemia is as rampant to warrant such mandatory measures.
- **Manipulating food choices:** When mandatory fortification is enforced in parts of the population that do not need this, it removes their choice of foods, or autonomy.
- **Morbidities due to excess:** It could even be unethical if the risk of other morbidities is increased.
- **No successful example:** Rice fortification has not been shown to work in a combined analysis.

Conclusion

- Food fortification is not a magic bullet.
- It should be viewed as a complementary strategy for the prevention and control of micronutrient deficiencies.
- As dietary patterns and deficiency states change, monitoring and periodic evaluation will be essential in helping to make necessary changes.

4. Six nations call for 'immediate' aid for Afghans

- The **third India-Central Asia dialogue**, hosted by Indian External Affairs Minister saw participation from the Foreign Ministers of Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan.

Afghan issue:

- The six nations shared **common concerns and objectives in Afghanistan.**
- The participating ministers noted the broad 'regional consensus' on the issues related to Afghanistan like the formation of a representative and inclusive government in Afghanistan, preserving the rights of women, children and other national ethnic groups, **combating terrorism and drug trafficking from Afghanistan.**

- Notably none of the countries recognise the Taliban. While Turkmenistan and Uzbekistan have reopened their missions in Kabul and also exchanged ministerial-level visits with Kabul, like Kazakhstan and the Kyrgyz Republic, Tajikistan has taken a strong stand against the Taliban.
- The joint statement noted the importance of providing immediate humanitarian assistance for the Afghan people

Bilateral ties:

- The dialogue involved discussions on how to **increase links between Central Asian countries and India** in terms of connectivity and trade relations.
- Noting Pakistan's block on land trade from India, the countries proposed making use of the sea route via **India-run terminal at the Chabahar port in Iran** and the **International North South Transit Corridor** that goes via the Iranian port of Bandar Abbas.
 - International North-South Transport Corridor (INSTC), is multi-modal transportation established for the purpose of promoting transportation cooperation among the Member States. This corridor connects India Ocean and the Persian Gulf to the Caspian Sea via the Islamic Republic of Iran and then is connected to St. Petersburg and North Europe via the Russian Federation.
- The dialogue also decided to explore establishing joint working groups to address issues of **free movement of goods and services between India and Central Asian countries.**

GS 3 : Economy, Science and Technology, Environment

5. After 50 years, Gharials return to Beas Conservation Reserve

Gharial (*Gavialis gangeticus*) have been successfully reintroduced the in the Beas River of Punjab where it had become extinct half a century ago.

Gharials

- The Gharial is a fish-eating crocodile is native to the Indian subcontinent. They are a crucial indicator of clean river water.
- Small released populations are present and increasing in the rivers of the National Chambal Sanctuary, Katarniaghat Wildlife Sanctuary, Son River Sanctuary.

- It is also found at the rainforest biome of Mahanadi in Satkosia Gorge Sanctuary, Orissa.
- Gharials are '**Critically Endangered**' in the IUCN Red List of Species.
- The species is also listed under **Schedule I of the Wild Life (Protection) Act, 1972**.

Into the wild

- A major chunk of gharials in India is found in the Chambal River, which has about 1,000 adults.
- The Ghaghara acts as an important aquatic corridor for gharials in Uttar Pradesh. The river is a major left-bank tributary of the Ganges.
- Like Uttar Pradesh, Bihar too is releasing gharials in the Valmiki Tiger Reserve as part of restocking the wild population. Unlike crocodiles, gharials do not pose any danger to humans.

Ambitious project in Punjab

- The gharial reintroduction in the Beas Conservation Reserve is an ambitious programme of the Punjab government.
- The reptiles were commonly sighted in the Beas River till the 1960s but later became extinct.

6. Thar desert expanding fast with land degradation, finds study

- The study on **desertification of Thar region** conducted by the Central University of Rajasthan as part of an assessment of the environmentally sensitive areas within the framework of the **UN Convention to Combat Desertification (UNCCD)**.
 - The Thar desert is the world's ninth largest **hot subtropical desert**.

Details:

- The scientists studied the climate and vegetation in Thar to understand the desertification process.
 - **Desertification is land degradation in arid, semi-arid, and dry sub-humid areas**, collectively known as drylands, resulting from factors, including both human activities and climatic variations.
 - Desertification leads to **loss of biological productivity of soils** as a result of which fertile areas become increasingly arid.
- The study notes the fast eastward expansion of the Thar desert in India.

Contributing factors:

- In general, desertification is caused by **variations in climate and by unsustainable land-management practices** in dryland environments.
- The over-exploitation of resources had led to **reduction in vegetation cover** in the areas adjacent to the Thar desert, contributing to its expansion beyond four districts in western Rajasthan.
- The **destruction of the Aravali ranges due to unregulated and unsustainable mining operations** is a major factor contributing to the desertification in the region. The Aravali hills acts as a 'natural green wall' between the desert and the plains.
- **Climate change** also seems to be contributing to the spread of arid region. The **changes in the rainfall pattern, higher temperatures** is aiding the spread of sand dunes beyond their traditional regions.

Concerns:

- The degradation of land is posing a **threat to the desert ecology** and the flora and fauna of the region.
- The failure to control the spread of sand dunes will have an **impact on the Aravali ranges' northern part** as an ecotonal area, acting as transition zone between the ecological systems. Notably, this region supports a large population.
- The increasing desertification will result in **sandstorms from the desert travelling as far as the National Capital Region (NCR)** in the years to come. The sandstorms will also become more intense with the erosion of the Aravali's. Also the suspended particles from the arid region are **contributing to air pollution in NCR**.

THE INDIAN EXPRESS

GS 2 : Polity, Governance, International Relations

1. 60th Goa Liberation Day

Goa hosts PM for the celebration of its 60th liberation day.

Goan Liberation

- An important port for trade and military operations, Goa was ruled by the Portuguese for more than 450 years.
- Historically, revolts against Portuguese rulers and their policies were recorded in the 18th and 19th century too.
- On June 18, 1946, the movement of Goa's liberation gathered momentum after socialist leader Dr Ram Manohar Lohia plunged himself into the freedom movement with many young Goans.
- The day is now observed as Goa Revolution Day.

Freeing from Portuguese Rule

- Even as India became independent on August 15, 1947, Goa continued to be under Portuguese rule 14 years after that.
- After independence, the calls for Goa's Liberation again gathered steam.
- After multiple agitations by freedom fighters, India made peaceful attempts for Goa's liberation through diplomatic channels.
- However, as a last resort, the Indian government then led by PM Nehru, sent in its armed forces to the coastal state after which the Portuguese surrendered and Goa was liberated on December 19, 1961.
- This moment also marked the exit of the Portuguese (the first-comers), the last of the European colonizers to leave India.

Contribution of T.B. Cunha

- Cunha (1891-1958) was a prominent Indian nationalist and anti-colonial activist from Goa.
- He is popularly known as the "Father of Goan nationalism", and was the organiser of the first movement to end Portuguese rule in Goa

What was 'Operation Vijay'?

- Perhaps the first tri-service operation of the Indian armed forces, Operation Vijay was about the liberation of the Portuguese territories of Goa, Daman and Diu.
- It was a 36-hour military operation that started on December 18, 1961 and concluded on December 19, 1961.
- While the army advanced into Goa from the North and the East, the Indian Air Force bombed the Portuguese airbase at Dabolim.
- The Indian Navy was tasked with preventing hostile action by Portuguese warships, securing access to the Mormugao harbour, and securing the Anjadip island off Karwar.

- By the evening of December 19, 1961, Portuguese Governor General Vassalo De Silva had signed the document of surrender after Indian armed forces.

What happened after the liberation of Goa?

- Goa was annexed into the Indian Union and was the Union Territory of Goa, Daman and Diu.
- In 1967, however, the question of whether the state should merge with Maharashtra or not was answered through a plebiscite in which the majority of the Goan people voted against a merger.
- It continued to remain a Union Territory until 1987 when it was accorded statehood.
- Goa became India's 25th state even as Daman and Diu continue to be UTs.

2. Nord Stream Pipeline

Germany has warned about severe consequences for the Nord Stream 2 gas pipeline from Russia to Germany if Moscow attacked Ukraine.

Nord Stream 2 Pipeline

- It is a system of offshore natural gas pipelines running under the Baltic Sea from Russia to Germany.
- It includes two active pipelines running from Vyborg to Lubmin near Greifswald forming the original Nord Stream, and two further pipelines under construction running from Ust-Luga to Lubmin termed Nord Stream 2.
- In Lubmin the lines connect to the OPAL line to Olbernhau on the Czech border and to the NEL line to Rehden near Bremen.
- The first line Nord Stream-1 was laid and inaugurated in 2011 and the second line in 2012.
- At 1,222 km in length, Nord Stream is the longest sub-sea pipeline in the world, surpassing the Langeled pipeline.

Why is the pipeline controversial?

- The US believed that the project would increase Europe's dependence on Russia for natural gas.
- Currently, EU countries already rely on Russia for 40 percent of their gas needs.

- The project also has opponents in eastern Europe, especially Ukraine, whose ties with Russia have seriously deteriorated in the aftermath of the Crimean conflict in 2014.
- There is an existing land pipeline between Russia and Europe that runs through Ukraine.
- The country feels that once Nord Stream 2 is completed, Russia could bypass the Ukrainian pipeline, and deprive it of lucrative transit fees of around \$3 billion per year.
- Ukraine also fears another invasion by Russia once the new pipeline is operational.

3. Need for a Bill on lynching

On December 18, a man was lynched to death by the Sikh Sangat (Sikh devotees) in Shri Harmandir Sahib Gurudwara (Golden Temple) in Amritsar over an alleged attempt to disrespect the holiest book of Sikh religion, Shri Guru Granth Sahib Ji.

- Reports suggest the group alleged he was trying to desecrate Shri Guru Granth Sahib Ji.

What's the issue?

Notably, this is not the first time someone has been killed over accusations of sacrilege of a holy book linked to Sikhism. Several such **lynchings** have taken place in the recent past.

- However, no political leader or the Police said a single word about people taking the law into their own hands and lynching the person accused of disrespecting the holy book.

Recent incidents of mob lynching:

- Last month in Assam, a 23-year-old student leader was allegedly killed by a mob.
- In October a man was allegedly lynched, his limbs cut off and left to die at the Singhu Border, site of the farmers' protest against the three farm laws.

- In August, a bangle seller in Indore was reportedly beaten up by a mob for allegedly hiding his identity.
- The man survived and was sent to judicial custody.
- In May this year, a 25-year-old Gurugram man was allegedly lynched when he went out to buy medicines.

What is meant by Lynching?

Any act or series of acts of violence or aiding, abetting (encouraging) such act/acts thereof, whether spontaneous or planned, by a mob on the grounds of religion, race, caste, sex, place of birth, language, dietary practices, sexual orientation, political affiliation, ethnicity or any other related grounds.

How are these cases handled?

There is **“no separate” definition for such incidents under the existing IPC.** Lynching incidents can be dealt with under **Section 300 and 302 of IPC.**

- **Section 302** provides that whoever commits murder shall be punished with death or imprisonment for life and shall also be liable to fine. Offence of murder is a cognisable, non-bailable and non-compoundable offence.

SC guidelines:

- There should be a **“separate offence” for lynching and the trial courts must ordinarily award maximum sentence** upon conviction of the accused person to set a stern example in cases of mob violence.
- The state governments will have to **designate a senior police officer in each district** for taking measures to prevent incidents of mob violence and lynching.
- The state governments need to **identify districts, sub-divisions and villages where instances of lynching** and mob violence have been reported in the recent past.
- The **nodal officers shall bring to the notice of the DGP about** any inter-district co-ordination issues for devising a strategy to tackle lynching and mob violence related issues.
- Every police officer shall **ensure to disperse the mob that has a tendency to cause violence** in the disguise of vigilantism or otherwise.

- **Central and the state governments shall broadcast** on radio, television and other media platforms about the serious consequences of mob lynching and mob violence.
- Despite the measures taken by the State Police, if it comes to the notice of the local police that an incident of lynching or mob violence has taken place, **the jurisdictional police station shall immediately lodge an FIR.**
- The State Governments shall prepare a lynching/ mob violence victim compensation scheme in the light of the provisions of Section **357A of CrPC.**
- If a police officer or an officer of the district administration fails to fulfill his duty, it will be considered **an act of deliberate negligence.**

Need of the hour:

- Every time there is a case of honor killing, hate crimes, witch hunting or mob lynching we raise demands for special legislation to deal with these crimes.
- But, the fact is that these crimes are nothing but murders and the existing provisions under IPC and CrPC are sufficient to deal with such crimes.
- Coupled with the guidelines laid down in Poonawala's case, we are sufficiently equipped to deal with mob lynching. However, what we lack is due enforcement of the existing laws and accountability of the enforcement agencies.

Attempts by various states in this regard:

- **Manipur** government came up first with its Bill against lynching in 2018, incorporating some logical and relevant clauses.
- **Rajasthan** government passed a bill against lynching in August 2019.
- **West Bengal** too came up with a more stringent Bill against lynching.

4. parvovirus

Nearly 2,000 pet and stray dogs in Amravati city were affected by canine parvovirus virus last month with veterinarians cautioning pet owners against a severe outbreak.

What is Parvovirus?

- It is a highly contagious viral disease affecting puppies and dogs.
- It affects the intestinal tract of canines with puppies being more susceptible.
- Bloody diarrhoea, vomiting, drastic weight loss, dehydration and lethargy are some of the symptoms.
- The virus has reported a 90 per cent mortality rate.

This virus was **discovered in 1967** and has rapidly become a serious threat to canine health. This is primarily due to the fact that the virus is hard to kill, can live for a long time in the environment, and is shed in large quantities by infected dogs.

How does the virus spread in dogs?

Through direct contact with an infected dog or by indirect contact with a contaminated object, including the hands and clothing of people who handle infected dogs.

What's causing increase in the number of cases?

- The recent rise in cases of Parvovirus in pets is due to the Covid-19 pandemic that compelled many pet owners to avoid timely vaccination of their dogs.
- Also, due to the non-implementation of the animal birth control programme, dog vaccination and rabies in the last three years has led to rising parvovirus cases in street dogs in the city.

GS 3 : Economy, Science and Technology, Environment

5. MSP for all crops is fiscally unfeasible

Many political parties are demanding to make the minimum support prices (MSP) a legal instrument.

Background of MSP

- MSP regime **had its genesis in 1965** when India was hugely short of basic staples and living in a “ship-to-mouth” situation.
- **Indicative price:** It was an **indicative price** (not a legal price) and procurement of rice and wheat was done to support farmers when they were adopting new seeds (HYV technology) and domestic procurement was to feed the PDS.
- **The government declares MSP for 23 crops:** Seven cereals (paddy, wheat, maize, bajra, sorghum, ragi and barley), five pulses (tur, moong, chana, urad and masur), seven oilseeds (soybean, groundnut, rapeseed-mustard, sesamum, safflower, sunflower and nigerseed) and four commercial crops (sugarcane, cotton, jute and copra).

Need to rethink procurement policy

- But now with granaries overflowing with rice and wheat, there is a need to rethink and redesign the procurement policy.
- In the crop year 2020-21, about 60 million metric tonnes (MMTs) of rice and 43 MMTs of wheat were procured by the Food Corporation of India (FCI) and NAFED procured about 0.66 MMTs of pulses.

The increasing cost of PDS

- The main procurement by the government happens largely for rice and wheat to feed the public distribution system (PDS).
- The PDS issue prices of rice and wheat are subsidised **by more than 90 per cent** of their economic cost to the government.
- In 2020-21, the food subsidy bill was almost **30 per cent of the net tax revenue of the central government**, reflecting clearly a huge consumer-bias in the system.
- **Way forward:** Unless this PDS is reformed either by **restricting this to say the bottom 30 per cent of the population**, or **raising the issue prices** to say half the economic cost of rice and wheat, giving a better deal to farmers is likely to blow up the fiscal position of the central government.

The cost of legal MSP

- Assuming that only 10 per cent of the production of remaining crops (excluding sugarcane) is procured, it will cost the government **about Rs 5.4 lakh crore annually** to procure these other MSP crops.
- This cost is estimated **on the basis of economic costs of operation** that are usually about 30 per cent higher than the MSP (in case of rice and wheat it is 40 per cent).

- But it appears that despite this, **market prices may stay below MSP**, especially during the harvest time.
- It also raises the question why only these MSP crops, why not other agri-produce, say milk, the value of which is more than the value of rice, wheat and sugarcane combined.

Way forward

- **PDP:** One may use **price deficiency payments (PDP)**, implying that the government pays to farmers the gap between the market price and MSP, whenever market prices are below MSP.
- **Income support instead of price support:** It may be better to use an income policy on a per hectare basis to directly transfer money into farmers' accounts without distorting markets through higher MSPs or PDPs.

Conclusion

There is no easy substitute to “getting the markets right”. Government need to apply an innovative approach to solve the conundrum of the MSP.

6. India's Missile Capability

The Defence Minister has encouraged scientists to work towards developing hypersonic missile technology after China's successful demonstration of hypersonic glide vehicles (HGV).

History of Missile Technology in India

(1) Pre-Independence

- Before Independence, several kingdoms in India were using rockets as part of their warfare technologies.
- Mysore ruler Hyder Ali started inducting iron-cased rockets in his army in the mid-18th century.
- By the time Hyder's son Tipu Sultan died, a company of rocketeers was attached to each brigade of his army, which has been estimated at around 5,000 rocket-carrying troops.

(2) Post-Independence

- At the time of Independence, India did not have any indigenous missile capabilities.
- The government created the Special Weapon Development Team in 1958.
- This was later expanded and called the Defence Research and Development Laboratory (DRDL), which moved from Delhi to Hyderabad by 1962.
- In 1972, Project Devil, for the development of a medium-range Surface-to-Surface Missile was initiated.
- By 1982, DRDL was working on several missile technologies under the Integrated Guided Missiles Development Programme (IGMDP).

What kind of missiles does India have?

- India is considered among the top few nations when it comes to designing and developing missiles indigenously.
- However, it is way behind the US, China and Russia in terms of range.
- DRDO is working on multiple varieties of missiles:

[A] Surface-launched Systems

ANTI-TANK GUIDED MISSILE:

- Nag has already been inducted into the services. Nag is the only fire-and-forget ATGM meeting all weather requirements for its range (around 20 km).
- Recently Heli-Nag was tested, which will be operated from helicopters and will be inducted by 2022.
- There is also a Stand-off Anti-Tank (SANT) missile, with a range over 10 km.

SURFACE-TO-AIR MISSILE

- **Short-range SAM system:** Akash has already been inducted in the Army and the Air Force.
- For Akash 1, which has a seeker, the Army has already got the Acceptance of Necessity from the government.
- For Akash (New Generation), the first tests were conducted in July this year and a couple more trials are to be done.
- **Medium-Range SAM:** Production of MRSAM systems for the Navy is complete, and it is placing its order.

[B] Air-launched Systems

AIR-TO-AIR:

- Astra, India's Beyond Visual Range Air-to-Air Missile (BVRAAM), has been completely tested and is under induction.
- It has a range of around 100 km, and DRDO is trying to now induct it with more IAF platforms, including the domestically developed light combat aircraft Tejas.
- A long-range Astra is also being developed, for which initial tests have been conducted.
- The missile uses solid fuel ramjet technology, which enhances speed, and will have an indigenously-built seeker.

AIR-TO-GROUND:

- Rudram, a New Generation Anti-Radiation Missile (NGRAM), has cleared initial tests and some more tests will be conducted soon.
- With a maximum range of around 200 km, the missile mainly targets communication, radar and surveillance systems of the adversary, and was tested from the Sukhoi-30MKI fighter jet last year.
- BrahMos, which India developed jointly with Russia, is already operational.
- It has a 300 km to 500 km range, and is a short-range, ramjet-powered, single warhead, supersonic anti-ship or land attack cruise missile.

India's crucial missile systems

The two most important are Agni and Prithvi, both being used by the Strategic Forces Command.

- **Agni** (range around 5,000) is India's only contender for an inter-continental ballistic missile (ICBM), which is available in only a few countries.
- **Prithvi**, although a short-range surface-to-surface missile with a 350 km range, has strategic uses. India also tested an anti-satellite system in April 2019.
- A modified anti-ballistic missile named Prithvi Defence Vehicle Mk 2 was used to hit a low-orbit satellite.
- It put India only behind the US, Russia and China in this capability.

What about Hypersonic Technology?

- India has been working on this for a few years, and is just behind the US, Russia and China.
- DRDO successfully tested a Hypersonic Technology Demonstrated Vehicle (HSTDV) in September 2020, and demonstrated its hypersonic air-breathing scramjet technology.
- India has developed its own cryogenic engine and demonstrated it in a 23-second flight.

- India will try to make a hypersonic cruise missile, using HSTDV.
- Only Russia has proven its hypersonic missile capability so far, while China has demonstrated its HGV capacity.
- India is expected to be able to have a hypersonic weapons system within four years, with medium- to long-range capabilities.

What makes India good in missile technology?

- Missile technology is one field in which India has made very positive and substantial progress.
- Under the IGMP then headed by A P J Abdul Kalam, later India's President, first came Prithvi, then Agni.
- BrahMos, at 2.5-3 times the speed of sound, was among the fastest in the world when developed.
- After the nuclear blast in 1998, cryogenic etc were not given to us by developed countries. Kalam and others, they made it a point that they developed it within the country.

Where do China and Pakistan stand compared to India?

- While China is ahead of India, a lot of things about China are psychological.
- China may have either achieved parity or even exceeded the US in land-based conventional ballistic and cruise missile capabilities.
- China's missile development is definitely a concern for us, but we will definitely evolve.
- It has given the technology to the irresponsible hands of Pakistan. But getting technology and really using it, and thereafter evolving and adopting a policy is totally different.

7. Why policymakers prefer targeting of Retail Inflation over Wholesale Inflation?

The wholesale inflation in India has grown by double digits. This is the highest year-on-year increase recorded in any month since the start of the 2011-12 data series.

Context

- It is surprising policymakers are not looking as concerned as the inflation figures show.

- The Finance Ministry has largely focused on the trend in retail inflation – or the inflation rate at the level of retail consumers.
- It is not just the policymakers within the government who prefer to focus on retail inflation but also the RBI.

Wholesale and Retail (Consumer) Inflation

- The wholesale and retail (consumer) inflation rates are based on the wholesale price index (WPI) and the consumer price index (CPI), respectively.
- In other words, we make two separate indices – one each for wholesale prices and retail prices – and see how the index values have gone up in a particular month as against the same month last year.
- The percentage change is the rate of inflation.
- The CPI-based inflation data is compiled by the Ministry of Statistics and Programme Implementation (or MoSPI) and the WPI-based inflation data is put together by DPIIT.

The tables alongside detail how the two indices – WPI and CPI – differ in their composition. There are two key differences.

A Comparison

(1) Manufactured Goods Vs. Food Items

- WPI is dominated by the prices of manufactured goods while CPI is dominated by the prices of food articles.
- As such, if the year-on-year increase in the prices of food articles is subdued, as is the case at present, chances are that the overall (also called headline) retail inflation will be within reasonable bounds.
- In WPI, if manufactured products are getting costlier at the wholesale level then that would likely spike wholesale inflation regardless of how food prices are doing at the wholesale level.

(2) Accounting Service

- Two, WPI does not take into account the change in prices of services. But CPI does.
- If services such as transport, education, recreation and amusement, personal care etc. get significantly costlier, then retail inflation will rise but there will be no impact on wholesale price inflation.

Why do policymakers prefer targeting retail inflation instead of wholesale inflation rate?

- **RBI's limitations:** RBI is the monetary authority that has little ability to control food and fuel prices. Ex: raising the repo rate (rate at which RBI lends money to banks) is unlikely to contain the price of vegetables if any disruptions have led to a sudden spike.
- **Non-commodity Inflation:** Wholesale inflation does not capture price movements in non-commodity-producing sectors like services, which constitute close to two-thirds of economic activity in India.
- **Large revisions in WPI:** Movements in WPI often reflect large external shocks and as such, the wholesale inflation rate is often subject to large revisions.

Arguments in favour of CPI-based inflation targeting

- **Commodity basket:** A crucial reason why CPI-based inflation could not be ignored is the fact that it has almost 57% dominance of food and fuel prices.
- **Affecting general public:** Since most people use retail inflation as a way to arrive at their real earnings, and use it for wage negotiations etc., it makes more sense for policymakers,
- **Public faith:** The choice of CPI establishes 'trust' viz., economic agents note that the monetary policy maker is targeting an index that is relevant for households and businesses.
- **Inflation affecting people:** True inflation that consumers face is in the retail market. It is for this reason that almost all central banks in big economies use CPI as their primary price indicator.

Impact of Wholesale inflation on Retail

- The Urjit Patel committee analysed the relationship between WPI and CPI based on monthly data from January 2000 to December 2013 – a total of 14 years.
- When they looked at the impact of an increase in WPI-food inflation on CPI food inflation, they found it to be “significant”.
- It stated that higher food inflation in wholesale markets leads to an increase in retail food inflation “till two months”.
- An increase in retail food inflation leads to a corresponding increase in WPI-food inflation.

8. What is Irrecoverable Carbon?

Researchers have identified and mapped 139 gigatonnes (Gt) of “irrecoverable carbon” in some of the world’s major forests and peatlands – including the Amazon and the Congo – to avoid catastrophic climate change.

What is Irrecoverable Carbon?

- The concept of ‘irrecoverable carbon’ was introduced in 2020.
- All kinds of ecosystems – lush rainforest, muddy peatland, shady mangroves – contain eons of stored carbon, captured by photosynthesis.
- Per square kilometer, the forests are among the most effective carbon stores in the world; but they’re also some of the most difficult to restore.
- If destroyed, these ecosystems could take decades or centuries to regenerate.
- In other words, the 139 gigatons of carbon contained in these areas are effectively irrecoverable if released due to anthropogenic activities.
- Once released in air, it can be recovered but would take centuries to fully recover or naturally reintegrate.

What is the new research?

- In the new study, researchers have identified and mapped carbon reserves that are “manageable, are vulnerable to disturbance” and cannot be recovered by 2050.
- They held study of peatlands of the Congo Basin and Northern Europe; and in North America, the mangrove swamps of the Everglades and old-growth forests of the Pacific Northwest.
- 2050 has been set as the deadline for taking global carbon emissions to net zero in order for Earth to avoid warming at 1.5-2 degrees celsius above the pre-industrial levels.
- To mitigate such a warming scenario, it is imperative to conserve the ecosystems with 139 Gt carbon.

Key findings

- Amazon is the biggest carbon sink on earth, holding 31.5 Gt irrecoverable carbon.
- Brazil has the second-largest irrecoverable carbon reserves, after Russia that holds 23 per cent of the total irrecoverable carbon outlay in the world.
- The second-largest reserve of carbon, at 132 Gt, comprise the islands of Southeast Asia, with their equatorial rainforests.

- The Congo basin is the third-largest hotspot of irrecoverable carbon with over 8 Gt of carbon reserves, according to the study.
- Australia, which has become a hotspot for wildfires, is home to 2.5 per cent of the world's carbon reserve along its coastal mangroves and forests in the southeast and southwest.

Why conserve these forests?

- These regions are already being ravaged by wildfires and exploited for resources by mining and oil industries.
- Since 2010, agriculture, logging and wildfire have caused emissions of at least 4 Gt of irrecoverable carbon.

Prelims Practice Questions

1. Consider the following statements:

1. It shares cultural heritage link with Russia.
2. To the North of it is Belarus and to the South West is Moldova.
3. It is situated to North of the Black Sea.

Identify the Country.

- a. Romania
- b. Poland
- c. Ukraine
- d. Slovakia

Answer : c

Ukraine

- Capital: Kyiv
- Ukraine and Russia share hundreds of years of cultural, linguistic and familial links.
- As part of the Soviet Union, Ukraine was the second-most powerful Soviet republic after Russia, and was crucial strategically, economically and culturally.

- Ever since Ukraine split from the Soviet Union, both Russia and the West have vied for greater influence in the country in order to keep the balance of power in the region in their favour.
- In 2014, Russia seized Crimea from Ukraine-the first time a European country annexed territory from another country since World War 2.
- Ukraine Shares border with Belarus, Poland, Slovakia, Hungary, Romania, Moldova and Russia.
- It is situated to the North of Black Sea.

2. Consider the following statements with regards to Gharials:

1. Gharials are a type of Asian crocodilian distinguished by their long, thin snouts.
2. Their IUCN status is Critically Endangered.
3. They are a part of Appendix I of CITES and Schedule I of the Wildlife (Protection) Act, 1972.

Choose the correct code:

- a. 1 & 2 only
- b. 1 & 3 only
- c. 2 & 3 only
- d. All of the above

Answer: d

Explanation:

- Gharials, also known as gavials, are Asian crocodiles with long, narrow snouts that resemble a pot. Gharial population is a reliable sign of pure river water. **Hence Statement 1 is correct.**
- According to the International Union for Conservation of Nature(IUCN), Gharial are Critically Endangered . **Hence Statement 2 is correct.**
- Gharials are Listed under Schedule I of the Wild Life (Protection) Act, 1972 and on Appendix I of Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). **Hence Statement 3 is correct.**

3. Which one of the following is not a subindex of the World Bank's 'Ease of Doing Business Index'?

- a. Maintenance of law and order
- b. Paying taxes
- c. Registering property
- d. Dealing with construction permits

Answer: a

Explanation:

- The World Bank Group designed the Ease of Doing Business (EoDB) index as a rating system.
- The parameters of Ease of Doing Business Index are: –
 - Starting a Business
 - Dealing with Construction Permits
 - Getting Electricity,
 - Registering Property,
 - Getting Credit,
 - Protecting Minority Investors,
 - Paying Taxes,
 - Trading Across Borders,
 - Enforcing Contracts and
 - Resolving Insolvency.
- Thus, maintaining law and order is not a factor in the 'Ease of Doing Business Index.'
- **Hence Option A is correct.**

4. Which one of the following is India's first Indigenous Aircraft Carrier?

- a. INS Arihant
- b. INS Vikrant
- c. INS Vikramaditya
- d. INS Viraat

Answer: b

Explanation:

- India's first indigenous aircraft carrier is the INS Vikrant .
- INS Vikrant, also known as the 'Indigenous Aircraft Carrier 1 (IAC-1)'.
- It was built for the Indian Navy by Cochin Shipyard Limited in Kochi, Kerala.
- **Hence Option B is correct.**

5. Nord Stream 2 pipeline, recently seen in the news, connects which of the following nations?

- a. Russia – Ukraine
- b. Russia – Germany
- c. Russia – China
- d. Russia – Poland

Answer: b

Explanation:

- Nord Stream 2 is a twin-pipe gas pipeline that runs through the Baltic Sea. It will transport up to 55 billion cubic meters of gas per year from Russia to Germany.
- **Hence Option B is correct.**

6. The Log4Shell Vulnerability is associated with which of the following fields

- a. Cyber Security
- b. Health and Family Welfare
- c. Space Science and Astronomy
- d. Environment

Answer : a

Log4j Vulnerability

- A new vulnerability named Log4Shell is being touted as one of the worst cyber security flaws to have been discovered.
- The vulnerability is based on an open-source logging library used in most applications by enterprises and even government agencies.
- The exploits for this vulnerability are already being tested by hackers.

- The vulnerability is dubbed Log4Shell and is officially CVE-2021-44228 (CVE number is the unique number given to each vulnerability discovered across the world).
- The problem impacts Log4j 2 versions which is a very common logging library used by applications across the world.
- Logging lets developers see all the activity of an application.
- Tech companies such as Apple, Microsoft, Google all rely on this open-source library, as do enterprise applications from CISCO, Netapp, CloudFare, Amazon and others.
- The vulnerability is serious because exploiting it could allow hackers to control java-based web servers and launch what are called 'remote code execution' (RCE) attacks.
- In simple words, the vulnerability could allow a hacker to take control of a system.

Mains Practice Questions

1. Explain the value-added, income and expenditure methods of estimating national income.

Approach:

- Briefly explain the concept of national income.
- Explain the value added, income and expenditure methods of estimating national income.
- Conclude with a brief note on the methods employed in India.

2. Agricultural marketing in India suffers from various shortcomings. Explain. Highlight the measures taken by the government to improve the agricultural marketing system in India.

Approach:

- Start with a brief note on agricultural marketing.
- Explain the various shortcomings of agricultural marketing in India.

- Highlight the measures taken by the government to improve the agricultural marketing system in India.
- Conclude briefly by mentioning the further measures needed.

