

Rising Human-Animal Conflict**Why in News?**

- Wayanad is on the boil after a wild elephant chased a 47-year-old man and trampled him to death.

Rising Human-Animal Conflict in Kerala

- The tragedy brings to attention escalating human-animal conflict in the state.
- Increased incidence of wild animals, mainly elephants, tigers, bison, and wild boars, attacking human beings have been reported from across the state.
- Government data for 2022-23 recorded 8,873 wild animal attacks, of which, 4193 were by wild elephants, 1524 by wild boars, 193 by tigers, 244 by leopards, and 32 by bison.
 - Of 98 reported deaths, 27 were due to elephant attacks.
- Beyond posing risk to humans, these attacks also devastated Kerala's agriculture sector.
- From 2017 to 2023, there were 20,957 incidents of crop loss due to wild animal raids which also killed 1,559 domestic animals, mainly cattle.
- Wayanad Worst-affected Region:
 - Wayanad, which boasts of a forest cover of 36.48 per cent, has lost 41 lives to elephant attacks and seven to tiger attacks over the last decade.
 - Its geographical location plays a role in this.

Reasons Behind Rise in Human-Animal Conflict in Kerala

- A 2018 study by Dehradun's Wildlife Institute of India and the Periyar Tiger Conservation Foundation in Kerala found two major drivers of human-animal conflict in the state.
- Decline in Quality of Forest Habitats:
 - Largely due to the cultivation of alien plants — mainly acacia, mangium and eucalyptus — in forest tracts for commercial purposes.
 - With 30,000 hectares of forest land in Kerala being used for cultivation of these species, animals are deprived of their natural habitat and food sources.
 - Moreover, these water-guzzling species also strain the forest's natural water resources.
 - Elephants are among the worst-affected species due to this. Invasive species such as lantana, mikania and senna, planted by forest department over decades, have also hindered growth of natural vegetation in forests.
- Changing Agri-practices:
 - The study also found that changing agri-practices were also responsible for drawing animals, which do not find enough fodder in their habitats, out of forests.
 - In recent years, owing to poor returns and high wage costs, more and more farmland is being left unattended.
 - This makes them ideal targets for wildlife looking to snack on bananas and pineapples, among the most cultivated crops in the region.
 - Moreover, the increase in wildlife attacks has further pushed people to safer settlements away from their farms.
 - This further entices animals to raid estates neighboring forests.
 - The crisis in Kerala's farm sector has also driven many towards animal husbandry.
 - In Wayanad particularly, the dairy sector has emerged as a lifeline for villagers.
 - But domesticated animals are also prime targets for tigers and other carnivores, especially older animals less capable of hunting in the wild.
- Apart from declining quality of forests and changing agri-practices, following human activities also contribute to increasing animal-human conflict in Kerala:
 - Waste disposal near forested areas,
 - Fragmentation of animal habitats due to wanton construction, and
 - Increased human presence in and around animal habitat

How is Kerala Addressing This Issue?

- The state has several schemes meant to prevent animals from entering human settlements.
- These include schemes for the construction of elephant-proof trenches, elephant-proof stone walls, and solar powered electric fencing.
- In 2022-23, the state conducted maintenance of 158.4 km of elephant-proof trenches, and constructed 42.6 km of solar fencing and 237 m of compound walls.
- To keep animals in forests, Kerala has also undertaken eco-restoration programmes.
- The state is also running a scheme to acquire land from farmers, to be then converted into forestland.
- However, these measures are far away from addressing the crisis.

What Are Elephant Corridors?

- Elephant corridors are linear, narrow, natural habitat linkages that allow elephants to move between secure habitats without being disturbed by humans.
- Elephant corridors are also critical for other wildlife including India's endangered National Animal, the Royal Bengal tiger (*Panthera Tigris*).

Elephant Corridors in India

- Number of elephant corridors in India have been changing over the years.
- 88 corridors were identified jointly by the Ministry of Environment, Forests and Climate Change and Wildlife Trust of India (WTI), and published in 2005.
 - Wildlife Trust of India is an Indian NGO committed to nature conservation.
- In 2015, a second round of identification took place — and when published two years later, the number of corridors had gone up to 101.
 - The number of corridors increased because of fragmentation of existing corridors.
- As per the Elephant Corridors of India, 2023 Report, there is a surge of 62 new corridors, marking a 40% increase since 2010, now totalling 150 corridors across the nation.
- West Bengal has the highest number of elephant corridors, totalling 26.

INTERNATIONAL RELATIONS**Qatar frees 8 ex-Indian Navy men jailed on espionage charges****Why in News?**

- Qatar has released eight veterans of the Indian Navy who were sentenced to death on espionage charges.
- Seven of the eight former Indian Navy personnel have now returned to India.

India – Qatar Bilateral Relation

- High-level visits
 - The two countries have had friendly relations for decades.
 - Since PM Manmohan Singh's visit to Qatar in November 2008, the first by an Indian Prime Minister, the relationship has burgeoned.
 - The Emir of Qatar, Sheikh Tamim Bin Hamad Al Thani, visited India in 2015, and PM Modi went to Qatar in 2016.
 - The late Sushma Swaraj became the first Indian Foreign Minister to visit Qatar in 2018.
- Bilateral trade
 - In 2021, India was among the top four export destinations for Qatar; it is also among the top three sources of Qatar's imports.
 - India's total imports from Qatar in FY2022-23 were valued at \$16.81 billion, of which LNG imports alone were worth \$8.32 billion, or 49.5%.
 - Qatar is India's largest source of liquefied natural gas (LNG).
 - India's exports to Qatar were valued at just \$1.97 billion in FY2022-23.
 - The major exports include cereals, copper articles, iron and steel articles, vegetables, fruits, spices, and processed food products.
- LNG Supply Agreement
 - In January 2024, India and Qatar agreed to prolong their LNG supply agreement, extending it until 2048.
 - India's Petronet has secured a monumental deal to continue purchasing 7.5 million tonnes of LNG annually from Qatar starting in 2029.
 - This agreement, hailed as the world's largest extension for liquefied natural gas, builds on an original 25-year contract initiated in 1999, with deliveries commencing in 2004.
- Defence co-operation
 - Defence co-operation has been officially described as a pillar of Indian-Qatar ties.
 - The India-Qatar Defence Cooperation Agreement, signed during PM Singh's November 2008 visit, was a significant turning point. The agreement was extended for another five years in 2018.
 - Experts at that time described the agreement as just short of stationing troops.
 - Indian Naval and Coast Guard ships regularly visit Qatar. QENF delegations participated in two maritime exercises in India in 2021.
 - Two editions of a joint naval exercise called Zair Al Bahr have been held.
- Indian migrants in Qatar
 - Qatar has around 8 lakh Indian migrants, who send remittances back home.
 - In FY 2021-22, it sent the eighth-highest amount of remittances among all countries.

Challenges in India – Qatar Bilateral Relation

- BJP spokesperson's derogatory references to the Prophet on a TV show
 - In June 2022, BJP spokesperson Nupur Sharma's made derogatory references to the Prophet on a TV show.
 - Qatar was the first country to object, and demand a "public apology" from India soon after the controversy erupted.
- The boil over the Israeli bombardment of Gaza
 - The news of the death penalty for the Indians has come at a time when the Middle East is on the boil over the Israeli bombardment of Gaza.
 - Qatar, which is deeply sympathetic to the Palestinians, has mediated the release of two American hostages from Hamas captivity in Gaza, and the country's diplomats are said to be working as a regional mediator in the crisis.

Background of the present case

- Arrest of eight navy personnel
 - On August 30, 2022, eight former Indian Navy personnel, along with two others, were arrested on undeclared charges.
 - They were put in solitary confinement.
 - These personnel were working at Al Dahra Global Technologies and Consultancy Services, a defence services provider company.
 - As per different sources, the Indians had been working in their private capacity with the company to oversee the induction of Italian small stealth submarines U2I2.
 - The company's old website, which no longer exists, said it provided training, logistics and maintenance services to the Qatari Emiri Naval Force (QENF).
- Charges against the men
 - The officers were jailed on charges that have not been made public.
 - However, as per the media reports, the eight Indians had been charged with spying for Israel.
- Navy veterans were awarded death penalty
 - In March 2023, the last of multiple bail pleas filed for the veterans was rejected.
 - The trial began later that month and on October 26, 2023, the death sentence was handed to all eight men.
- Appeal filed by India
 - In November 2023, the MEA announced it had filed an appeal and that its legal team had details of the charges.
- Death sentence commuted
 - In December 2023, the Court of Appeal of Qatar commuted the death sentence of eight former Indian Navy personnel.

News Summary: Qatar frees 8 ex-Indian Navy men jailed on espionage charges

- This development follows intense diplomatic efforts nearly four months after a Qatari court's death sentences were commuted to various prison terms.

Why it matters?

- The release of the Navy veterans is a testament to the robust diplomatic channels and the goodwill shared between India and Qatar.
- It not only reinforces the safety and security of Indian nationals abroad but also strengthens bilateral ties.
- Millions of Indians reside and are employed across the Gulf region, serving as a significant source of remittances for India and playing a key role in the prosperity of Gulf economies.
- This incident demonstrates India's growing influence on the global stage and its ability to protect its citizens' interests internationally.

PRELIM FACTS

1. Earth System Model

- The Indian Institute of Tropical Meteorology is developing a first-for-India Earth System Model to improve climate forecasts and predict climate impacts.

About Earth System Model:

- It is open-source software that is designed to integrate the interactions of atmosphere, ocean, land, ice, and biosphere to estimate the state of regional and global climate under a wide variety of conditions.
- Since it is based on numerical weather prediction and data assimilation, it can be used for accurate climate change predictions.
- The Indian Institute of Tropical Meteorology along with the Centre for Climate Change Research (CCCR), is developing this first-for-India Earth System Model.
- Purpose: To improve its forecasts, facilitate long-term climate studies, and predict climate impacts in the coming years.
- IITM-ESM incorporates earth system components in the Climate Forecast System (CFS) from National Center for Environmental Prediction (NCEP, USA), and transforms the CFS seasonal prediction model to a long-term climate mode.
- Funding: An amount of ₹192.28 crores has been sanctioned under the Monsoon Convection, Clouds and Climate Change (MC4) sub scheme to develop the climate forecasting system.
- The work on the model is currently underway and is expected to be completed by 2025.

Monsoon Convection, Clouds and Climate Change (MC4) sub scheme:

- It was envisioned to improve the observational database and climate models for enhanced predictive understanding of monsoonal precipitation changes and their impacts in a warming environment.
- The overarching goal of MC4 is to describe better and quantify interactions among monsoon dynamics, clouds, aerosols, precipitation, and the water cycle in a changing climate.
- Nodal Ministry: Ministry of Earth Sciences (MoES).

2. FAST Telescope

- Recently, astronomers from the Nanjing University in China and elsewhere have detected a radio pulsar in a supernova remnant known as CTB 87 by using the Five-hundred-meter Aperture Spherical radio Telescope (FAST).

About FAST Telescope:

- The Five-hundred-meter Aperture Spherical radio Telescope (FAST), located in a karst depression in Guizhou, China.
- It is the world's largest single-dish radio telescope, with a receiving area equivalent to 30 football fields.
- It is expected that FAST will maintain its world-class status for the next 20 to 30 years.
- Goals
 - Detect neutral hydrogen to the edge of the universe, reconstruct the images of the early universe;
 - Discover pulsar, establish a pulsar timing array, and participate in pulsar navigation and gravitational wave detection in the future;
 - Join the International Very-Long-Baseline Interferometry Network to obtain hyperfine structures of celestial bodies;
 - Perform high resolution radio spectral survey. Detect weak space signals;
 - Participate in the search for extraterrestrial intelligence.

What are pulsars?

- A pulsar is a highly magnetized, rotating neutron star that emits beams of electromagnetic radiation.
- These beams are observed as regular pulses of radio waves, hence the name "pulsar". Pulsars are incredibly dense and have a mass greater than that of the Sun, packed into a sphere with a diameter of about 20 kilometers.

Supernova Remnants

- These are the aftermath of massive star explosions.
- When a star reaches the end of its life, it undergoes a supernova explosion, releasing an enormous amount of energy and scattering its outer layers into space.
- The remnants of these explosions contain various elements and provide valuable insights into the processes occurring during stellar evolution.

3. Pradhan Mantri Kisan Sampada Yojana

- Recently, the union Minister of State for Food Processing Industries informed the Rajya Sabha about the Pradhan Mantri Kisan Sampada Yojana.

About Pradhan Mantri Kisan Sampada Yojana:

- The Central Sector Scheme - SAMPADA (Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters) was approved by the cabinet in May 2017.
- The scheme has now been renamed as the "Pradhan Mantri Kisan Sampada Yojana (PMKSY)".
- It is a comprehensive package of component schemes, which is aimed at creation of modern infrastructure with efficient supply chain management from farm gate to retail outlet.
- It provides a boost to the growth of food processing sector in the country, helps in providing better prices to farmers, creates employment opportunities especially in the rural areas, reduces wastage of agricultural produce, increases the processing level and enhances the export of the processed foods.
- Objective: The objective of PMKSY is to supplement agriculture, modernize processing and decrease Agri-Waste.
- Components
 - Mega Food Parks,
 - Integrated Cold Chain and Value Addition Infrastructure
 - Infrastructure for Agro-Processing Clusters,
 - Creation of Backward and Forward Linkages,
 - Creation/Expansion of Food Processing & Preservation Capacities,
 - Food Safety and Quality Assurance Infrastructure and
 - Human Resources and Institutions
- Nodal Ministry: Ministry of Food Processing Industries.

4. High-Altitude Pseudo Satellite Vehicle (HAPS)

- Recently, the National Aerospace Laboratories (NAL) in Bengaluru has successfully completed the first test of a solar-powered high-altitude pseudo satellite vehicle.

About High-Altitude Pseudo Satellite vehicle:

- It is a new age unmanned aerial vehicle (UAV) that can significantly increase India's surveillance and monitoring capabilities in the border areas.
- It is a still-developing technology, and the successful test flight last week puts India among a very small group of countries currently experimenting with this technology.
- Features
 - It can fly at altitudes of 18-20 km from the ground, almost double the heights attained by commercial airplanes.
 - It has the ability to generate solar power.
 - It can remain in air for months, even years, offering it advantages of a satellite.
 - It does not require a rocket to get into space.
 - The cost of operating HAPS is several times lower than that of a satellite that is usually placed at least 200 km from the earth.
- Applications of HAPS
 - It can be very useful in disaster situations.
 - It can even be used to provide mobile communications networks in remote areas
 - Even it can be used in continuous surveillance of border areas to detect changes or movements.

5. Preamble of the Indian Constitution

- The Supreme Court of India recently agreed to examine whether the words "socialist" and "secular" can be removed from the Preamble of the Indian Constitution.

About Preamble of the Indian Constitution:

- The preamble of the Indian Constitution serves as a brief introductory statement of the Constitution that sets out the guiding purpose, principles, and philosophy of the Indian Constitution.
- The Preamble is based on the Objectives Resolution, drafted and moved by Jawaharlal Nehru and adopted by the Constituent Assembly on January 22, 1947.
- The Preamble reveals four ingredients or components:
 - Source of authority of the Constitution: It is indicated by the Preamble that the source of authority of the Constitution lies with the people of India.
 - Nature of the Indian State: It declares India to be a sovereign, socialist, secular, and democratic republic.
 - Objectives of the Constitution: The objectives stated by the Preamble are to secure justice, liberty, and equality to all citizens and promote fraternity to maintain unity and integrity of the nation.
 - Date of adoption of the Constitution: It stipulates November 26, 1949, as the date.
- Amendments: By the 42nd Amendment of 1976, the words "Socialist" and "Secular" were inserted; the Preamble now reads "Sovereign Socialist Secular Democratic Republic".
- Interpretation by the Supreme Court:
 - Berubari Union case: In this case, it was held by the Supreme Court that the Preamble is part of the Constitution. However, it recognised that the Preamble could be used as a guiding principle if a term in any article of the Constitution is ambiguous or has more than one meaning.
 - Keshvananda Bharti v. State of Kerala: In this case, the Supreme Court overturned its earlier decision and held that the Preamble is a part of the Constitution and can be amended under Article 368 of the Constitution.
- Again, in the LIC of India case, the Supreme Court held that the Preamble is a part of the Constitution.

ANSWER WRITING

Q. What do you understand by the term Global Minimum Tax? How does it affect India's economy? Discuss.

Answer: A Global Minimum Tax (GMT) applies a standard minimum tax rate to a defined corporate income base worldwide. The OECD developed a proposal featuring a corporate minimum tax of 15% on foreign profits of large multinationals, which would give countries new annual tax revenues of USD 150 billion. The framework of GMT aims to discourage nations from tax competition through lower tax rates that result in corporate profit shifting and tax base erosion.

To address this issue and gain global compliance, an OECD/G20 inclusive framework has been introduced. In June 2021, G7 countries signed a deal agreeing to the framework. On 1st July 2021, around 130 countries including India agreed on the broad deal. The tax framework has the following two pillars:

- Pillar one: The 'largest and most profitable' MNCs need to pay taxes. At least 20% of the profit of the companies above the profit margin of 10% would be reallocated and taxed in the countries where they operate.
- Pillar two: Global minimum corporate tax rate is set at 15% in order to avoid any undercutting.
- The companies that will be taxed must have annual revenue of at least Euro 10 billion and a 10% pre-tax profit margin.

Need for Global Minimum Tax:

- Low Tax Jurisdictions: MNCs follow the system of locating the headquarters wherever the tax is the lowest so that the company ends up paying the tax at a much lower rate. Therefore, the smaller countries such as Ireland (where tax is low) were at advantage, but the bigger countries lost out on tax revenues.
 - G7 countries have announced a minimum 15% tax rate on all MNCs irrespective of whichever place they are so that the advantage of country shifting does not remain.
 - There GMT must be fixed to avoid countries undercutting each other.
- To Bring Uniformity: GMT will end a decades-long race to the bottom in which countries have competed to attract corporate giants with ultra-low tax rates and exemptions. And it will bring uniformity in corporate taxation worldwide.
- Multilayering by MNCs for Profits: Digital giants such as Apple, Alphabet and Facebook, as well as many other major corporations typically rely on complex webs of subsidiaries to hoover profits out of major markets into low-tax countries such as Ireland or Caribbean nations such as the British Virgin Islands or the Bahamas, or to Central American nations such as Panama.
 - India loses USD 10.32 billion annually to global tax abuse, equivalent to the annual salary of 4.23 million nurses and 44.7% of the health expenditure. According to a study, debt shifting, registering intangible assets (copyright and trademarks), and strategic transfer pricing are some ways in which MNCs practice tax evasion in the country they operate and shift it to tax havens.

Impact on Indian Economy:

- Bringing Equality: In the Indian context, the GMT will bring equality to those people maybe operating in India but not located in India and therefore not paying any taxes.
- Attract Investments: India is likely to benefit from the global minimum 15% corporate tax rate pact as the effective domestic tax rate (other than in Special Economic Zones) is above the threshold.
 - In all probability the concessional Indian tax regime would still work, and India would continue to attract investments.
- India at Advantage: Due to India's tax rates too, it will be in an advantageous position because Indian tax rates have come at a position where India can afford to give concessions to big companies and yet not fall down at the international tax rates.

- Challenge: Although the 15% GMT will not affect the current investments in India, setting up more SEZs or giving incentives to companies to invest in India will be a challenge.

Conclusion

This initiative of the G7 countries is a welcome move to address the different challenges that many countries are facing. Putting in place a global corporate tax at the minimum slab fixed by the G7 will majorly impact the developing economies.

MCQs

- Which of the following can be threats to the biodiversity of a geographical area?
 - Global warming
 - Fragmentation of habitat
 - Invasion of alien species
 - Promotion of vegetarianism

Select the correct answer using the codes given below:
(a) **1, 2 and 3 only** (b) 2 and 3 only
(c) 1 and 4 only (d) 1, 2, 3 and 4
- Biodiversity forms the basis for human existence in the following ways:
 - Soil formation
 - Prevention of soil erosion
 - Recycling of waste
 - Pollination of crops

Select the correct answer using the codes given below:
(a) 1, 2 and 3 only (b) 2, 3 and 4 only
(c) 1 and 4 only (d) **1, 2, 3 and 4**
- Consider the following statements:
Statement-I: NITI Aayog and Kingdom of the Netherlands released a report titled 'Liquefied Natural Gas (LNG) as a Transportation Fuel in Medium and Heavy Commercial Vehicle'.
Statement-II: Natural gas is cooled to approximately -260°F, creating a clear, colourless, and non-toxic liquid, known as LNG that can be transported easily across long distances.
Which one of the following is correct in respect of the above statements?
(a) **Both Statement-I and Statement-II are correct, and Statement-II is the correct explanation for Statement-I.**
(b) Both Statement-I and Statement-II are correct, and Statement-II is not the correct explanation for Statement-I.
(c) Statement-I is correct, but Statement-II is incorrect.
(d) Statement-I is incorrect, but Statement-II is correct.
- Consider the following statements with respect to 'Smart Gram Panchayat Project':
 - The project is funded under the revamped Rashtriya Gram Swaraj Abhiyan (RGSA).
 - The project aims to extend the PM-WANI (Prime Minister's Wi-Fi Access Network Interface) Service to Gram Panchayats in Begusarai, Bihar.
 - The project aims to bridge the rural-urban divide, foster accountability, and efficiency in local self-governance.

How many of the above statements are correct?
(a) Only one (b) Only two
(c) **All three** (d) None
- With reference to 'Female Genital Mutilation (FGM)', consider the following statements:
 - It comprises all procedures that involve altering the female genitalia for medical reasons.
 - It is concentrated primarily in Western, Eastern, and North-Eastern Africa.
 - Presently, there is no legislation that bans the FGM practice in India.
- How many of the statements given above is/are correct?
(a) Only one (b) **Only two**
(c) All three (d) None
- Consider the following sphere/sector:
 - Rechargeable batteries
 - Touch screens
 - Medicine
 - Aerospace
 - Supercapacitors

In how many of the above-mentioned sphere/sector Carbon nanotubes (CNTs) can be used?
(a) Only two (b) Only three
(c) Only four (d) **All five**
- Cuscuta dodder* has been recently in the news it is a/an
(a) Exoplanet
(b) News species of butterfly
(c) Type of cyber attack
(d) **Invasive weed**
- Which of the following statements are correct regarding the World Governments Summit (WGS)?
 - The guests of honour at the 2024 World Governments Summit were Turkey, India and Qatar.
 - The summit is organised by the United Nations Development Programme (UNDP).
 - The theme for the 2024 summit is "Shaping Future Governments".

Select the correct answer using the codes given below:
(a) 1 and 2 only (b) 2 and 3 only
(c) **1 and 3 only** (d) 1, 2 and 3
- Consider the following statements with respect to Business Payment Solution Provider (BPSP):
 - BPSP's are regulated by National Payments Corporation of India (NPCI)
 - It allows corporate credit card players to enable large payments directly to vendors or merchants' bank accounts.

Which of the statements given above are correct?
(a) 1 only (b) **2 only**
(c) Both 1 and 2 (d) Neither 1 nor 2
- Which one of the following statements is correct regarding 'Ergosphere'?
 - It is a region around a black hole where photons (light particles) can orbit the black hole in a circular path.
 - It is a region found outside the event horizon of a rotating black hole, where the black holes immense gravity drags space-time itself along with its rotation.**
 - It is the central point within a black hole where matter is infinitely dense and gravitational forces are infinitely strong.
 - It is the closest orbit around a black hole where an object can stably orbit without eventually spiraling into the black hole.