VAJIRAO IAS ACADEMY

India's Premier Coaching Institute for Civil Services (IAS/PCS)

CURRENT AFFAIRS WEEKLY

29th July - 3rd August 2024

vajiraoiasacademyofficial

vajiraoiasacademy

vajiraoiasacademyPvtLtd

8800533352/02

www.vajiraoiasacademy.com

DIRECTOR'S MESSAGE

"Civil Service is not just a job; it is an opportunity, to do your bit for society and to contribute to nation-building. It is an opportunity to realise your potential and make a meaningful contribution in the emancipation of masses."

Mr. Dilip Kumar
Director, Vajirao IAS Academy

Good Civil Servants ensure efficient and smooth governance. They are the backbone of the country and they have the power to make a difference in people's life.

We have set up extremely tough targets for ourselves. Now a day's, most of the students are well aware and focused about their aim. They just need a streak of guidance. We feel that we have done our bit in providing that blue streak of guidance and we are honoured to be a reason of smile on certain lips, proud to be your teacher, friend and guide.

INDEX

IAS EXAM.com
POWERED BY VAJIRAO IAS ACADEMY

1. Simplified Editorials

1.1 Landscape of Skill Development in India....1
1.2 India's Problems with Plastic Waste....3
1.3 India's Push to Secure Critical Minerals....5
1.4 Taking Care of Elderly Population in India....7
1.5 Rising Role of India in Global health Governance....9
1.6 Significance of Ethical Aspects of Artificial Intelligence....11

2. Daily Current Affairs

2.1 Dark Oxygen Discovery....15
2.2 Disability Reservations....17
2.3 South Africa's new law on Climate Change....19
2.4 Norms for Agarwood Export....21
2.5 Static Electricity in Pollination....22
2.6 India, US sign Cultural Property Agreement....24
2.7 Ethanol Production Shift: Sugarcane to Grains in India....26
2.8 Caller ID Spoofing....29
2.9 Supreme Court on States' Power to Tax Minerals....30
2.10 Transit-oriented Development Plan for 14 Large Cities....32
2.11 14th BRICS Trade Ministers' Meeting....33
2.12 Jharkhand MLAs Disqualified under Anti-defection Law....36
2.13 PCA Framework for Urban Cooperative Banks....38
2.14 Impact of Oil Spills on Environment....39
2.15 Tea Plantation Industry in India....42
2.16 Centre may Complain Against ILO Employment Report....44
2.17 India's Decision to Block Chinese....45
2.18 SC Launches Special Lok Adalat Drive....47
2.19 Encroaching Trees Threaten India's Open Ecosystems....49
2.20 Ukraine War Strengthens India-Europe Relations....51
2.21 US Becomes India's Second Largest LNG Supplier....53
2.22 Ethics of Hunger Strikes as a Mode of Protest....55
2.23 Direct-Seeded Rice and Zero-Tillage Wheat....56
2.24 India's Mineral Imports....59
2.25 The Broadcasting Services (Regulation) Bill, 2023....61

2.26 Direct-Seeded Rice and Zero-Tillage Wheat 63
2.27 Role of Retroviruses in Evolution of Human Genome.....66
2.28 Poor Auction for the Lithium block in Jammu and Kashmir.....68
2.29 Sub Categorisation of Scheduled Caste Reservation 69
2.30 30th meeting of the WMCC.....71
2.31 Legal Advisory Council 72
2.32 Enhanced Version of Existing CRISPR based Technology.....74
2.33 State of the World's Mangroves, 2024 Report.....76
2.34 Kerala Wayanad Landslides 78
2.35 India's Steel Production To Surpass 300 Million Tonnes By 2030.....80
2.36 Project Tiger to displace 5.5 lakh Tribals.....82
2.37 Report on Currency and Finance (RCF) for 2023-24.....84
2.38 Prohibition of Unlawful Conversion of Religion (Amendment) Bill, 2024.....85
2.39 India is the World's Second-Largest Aluminium Producer.....88
2.40 Disaster Management (Amendment) Bill, 2024.....89
2.41 Centre reissues draft on Western Ghats ESAs.....92
2.42 SC upholds Tamil Nadu's Arunthathiyar Quota Law.....93

[1.1] Landscape of Skill Development in India

[GS Paper 2 - Human Resource, Govt. Policies and Interventions]

Context - India is at a pivotal point in its economic development, with great growth potential but a formidable obstacle in closing the employment-unemployment divide. India is the fifth largest economy in the world, and part of its aim to create 'Viksit Bharat' by 2047 includes equipping its young people with the skills needed to adapt to a changing labor market.

This goal was emphasized in the most recent Union Budget 2024–25, which included large funding allocations for programs related to employment, education, and skill development. With almost 73% of workers between the ages of 15 and 59 lacking any official or informal vocational training, the challenge ahead is formidable.

India's Skilling Efforts not Translating into Improved Employment Outcomes

- **Structural Economic Constraints -** India has a sizable informal sector (between 85 and 90 percent) and a high percentage of micro, small, and medium-sized businesses (MSMEs) in its economy. Only 4.4% of the young workforce is formally skilled (Economic Survey 2023–24), with many MSMEs lacking the funds or incentives to invest in formal skill training. Instead, they prefer on-the-job learning.
- **Demographic Disparities -** According to the India Skills Report 2024, employability differs greatly between the states. While rural areas require more traditional and fundamental skill sets, urban centers require high-end tech talents. The skilling models that are currently in use do not sufficiently address this gap.
- **Technological Disruptions -** The speed at which technology is developing, especially in fields like automation, AI, and machine learning, is making many traditional skills outdated before the educational system can keep up.
- **No Alignment with Higher Education System -** Vocational training and higher education are very different from one another. The incompatibility of professional credentials and academic degrees produces a contradiction that diminishes the importance of skill-based learning.
- **Less Focus on Gig Economy -** The expansion of the gig economy and platform-based labor, which might support up to 90 million jobs, is altering the nature of work and necessitating the acquisition of new skills including digital literacy, self-management, and entrepreneurship. The majority of current skill development

initiatives are still focused on old job patterns, which leaves individuals ill-prepared for this shift in the workforce.

- **Limitations of Evaluation Models -** The existing skill development finance models frequently give short-term outputs (the number of trained individuals) precedence over long-term results (long-term career advancement and sustainable employment). This leads to distorted incentives that lower training's quality and applicability.

Measures to revamp India's Skilling Efforts

- **Skill-Mapping and Forecasting -** Establish a reliable, up-to-date labor market intelligence system that forecasts skill demands using big data analytics.
- **Skill Certifications -** Provide a system of stackable, modular credentials that will enable students to gradually advance their skills: Dividing intricate skill sets into more manageable, certified units Permit students to acquire credits over time in order to advance to higher certifications. Make sure there is a direct market value for each module.
- **Integration of Vocational Education -** Include vocational education in the high school curriculum: Commence offering occupational subjects as electives in the eighth grade. Provide a framework for transferring credits between academic and vocational programs.
- **Skill Centres of Excellence -** Create industry-specific Centers of Excellence for Skill Development in collaboration with top businesses: Industry associations with government backing ought to oversee these centers. Focusing on advanced, cutting-edge capabilities in developing industries is vital.
- **Gig Economy Preparedness -** Establish a specialized curriculum to get employees ready for the gig economy: Provide lessons on financial literacy, self-management, and digital platforms. To promote and legitimize the social security benefits of gig workers, establish a registry.
- **Revamped Apprenticeship Model -** Redesign the apprenticeship program to increase its appeal to businesses and apprentices alike: Provide tax breaks to businesses according to the quantity and caliber of apprenticeships they staff.
- **Rural Entrepreneurship through Skill Enhancement -** Become Digital Seva Skill Hubs by transforming Common Service Centers (CSCs). Train people in both contemporary and traditional skills that are important to rural economies. Provide market linkage assistance, microfinance, and mentorship.
- **Integrating Skill Development with MGNREGA -** Improving MGNREGA by adding elements for skill development Provide skill development as a component of the 100 days of work guarantee. Pay attention to abilities that are pertinent to regional and rural development.

Way Forward

To move forward, India must adopt a multifaceted approach to skill development that addresses structural economic constraints, demographic disparities, and technological disruptions. This includes integrating vocational education with the higher education system, enhancing gig economy preparedness, and revamping apprenticeship models to make them more appealing. Establishing industry-specific Centers of Excellence and

transforming Common Service Centers into Digital Seva Skill Hubs will further support rural entrepreneurship. Additionally, aligning skill development initiatives with programs like MGNREGA and implementing a reliable labor market intelligence system for skill-mapping and forecasting are crucial. By focusing on long-term outcomes and creating a system of stackable, modular skill certifications, India can ensure that its workforce is equipped to meet the demands of a rapidly evolving job market.

SOURCE: ***Livemint***

[1.2] India's Problems with Plastic Waste

[GS Paper 3 - Environmental Pollution & Degradation, Conservation]

Context - Only 25% of the 4 million tonnes of plastic garbage produced in India each year is recycled or otherwise dealt with. In order to tackle this problem, the government imposed the Extended Producer Responsibility (EPR) regulations, which require plastic consumers to gather and recycle their garbage. The market-driven strategy has drawbacks even as it exhibits promise.

To tackle the issue of plastic waste in India, it is necessary to enhance the recycling infrastructure while simultaneously emphasizing the decrease in plastic manufacturing and the promotion of sustainable substitutes.

Challenges with Mismanaged Plastic Waste in India

- **Choking the Environment -** In India, plastic trash seriously degrades the environment. During the monsoon, it clogs streams and causes floods in metropolitan areas. Another serious problem is marine pollution, with an estimated 0.6 million tonnes of plastic entering India's oceans each year, causing problems including bioaccumulation and eutrophication.
- **Public Health Concerns -** The Indian populace is at serious danger for health issues due to plastic garbage. Food items and sources of drinking water have been found to contain microplastics, the long-term health impacts of which are currently being investigated. The buildup of plastic garbage causes blockage and provides a possible breeding site for mosquitoes, which is one of the disease vectors that spreads dengue and malaria.
- **Economic Issues -** For India, the issue of plastic trash has serious economic ramifications. As per the findings of a survey by the FICCI, India may forfeit material values utilized in plastic packaging worth over USD 133 billion by 2030. This loss comes from uncollected plastic packaging waste, which is worth USD 68 billion.
- **E-Commerce and Packaging Waste -** Packaging waste has increased dramatically as a result of the Covid-19 outbreak and the swift expansion of e-commerce in India. Growing from USD 38.5 billion in 2017 to USD 200 billion by 2026 is the expectation for India's e-commerce market. The use of plastic packaging materials, such as bubble wrap, air pillows, and polybags, has expanded in tandem with this growth.

- **Regulatory and Enforcement Issues -** India has put in place a number of laws to combat the issue of plastic trash, but enforcement is still quite difficult. State-by-state variations exist in the application of the Plastic Waste Management Rules 2016 (modified in 2022).
- **Technological and Infrastructure Gaps -** When it comes to disposing of plastic waste, India is severely lacking in infrastructure and technology. Many communities lack up-to-date facilities for processing and segregating trash. In India, recycling accounts for only 60% of all collected plastic garbage.
- **Microplastic Pollution -** A growing problem is the use of sewage sludge containing microplastics and the usage of plastic mulch in agriculture. Microplastics can build up in agricultural soils, according to studies, and this could have an impact on crop productivity, food safety, and soil health.

Measures for Better Management of Plastic Waste in India

- **"Trash to Measure" -** Put into practice a thorough circular economy strategy for managing plastic waste. Promote the use of recyclable design while developing new products. Establish material recovery facilities in each major city to promote the 4Rs (reduce, reuse, recycle, and recover) and effectively sort and process plastic trash.
- **Smart Waste, Smart Cities -** Throughout India's cities, incorporate smart technology into trash management systems. Use Internet of Things-enabled smart trash cans to optimize collection routes by alerting authorities when they are full. Improve waste sorting and recycling procedures by utilizing AI and machine learning.
- **Greening the Supply Chain -** Expand and fortify the Extended Producer Responsibility (EPR) framework. Establish a tiered price structure with higher EPRs for plastics that are more difficult to recycle. To encourage exceeding recycling targets, implement a plastic credit trading system.
- **Awareness and Education Campaign -** Start a thorough, multilingual nationwide effort to raise awareness of plastic waste. Include management of plastic waste in all school curriculum, from elementary to tertiary. Organize frequent community forums on recycling and garbage segregation techniques.
- **Plastic Footprint -** Make yearly plastic footprint audits for large and medium-sized businesses a requirement. Require yearly reports to provide information to the public about plastic usage, garbage generation, and recycling rates. Provide a uniform process for figuring out and disclosing plastic footprints.
- **Green Procurement -** Incorporate stringent standards for reducing plastic waste into all government procurement procedures. When possible, require products purchased by the government to contain recycled plastic. Give preference to suppliers who have robust policies in place for recycling and reducing plastic waste.
- **Plastic-Free Farming -** Provide and support the development of biodegradable substitutes for plastic mulch and greenhouse covers. Establish a program for the recycling of plastic agricultural products, such as pesticide containers. Encourage the adoption of sustainable farming methods, such as the use of organic mulch.

- **Plastic in Road Construction -** Increase the country's usage of plastic trash in road building. Establish uniform standards for the ideal proportion of plastic waste in road construction materials. Create local plastic processing facilities to transform garbage into resources that are suitable for transportation.

Way Forward

To effectively manage plastic waste in India, it is crucial to enhance recycling infrastructure, reduce plastic production, and promote sustainable alternatives. Implementing a comprehensive circular economy strategy, integrating smart technology in waste management, and strengthening the Extended Producer Responsibility (EPR) framework are essential steps. Additionally, nationwide awareness campaigns, stringent government procurement standards, and innovative uses of plastic waste, such as in road construction, will further support these efforts. By addressing technological and regulatory gaps and encouraging sustainable practices, India can significantly mitigate the environmental, public health, and economic impacts of plastic waste.

SOURCE: ***The Hindu***

[1.3] India's Push to Secure Critical Minerals

[GS Paper 1 - Mineral and Energy Resources]

Context - The Union Budget 2024–25 proposes targeted customs duty exemptions for important minerals, including lithium, acknowledging energy security as a top priority. This calculated action demonstrates India's resolve to advance its zero-emission goals and quicken the transition to electric vehicles.

This exemption attempts to reduce resource and production costs, boost manufacturing, and foster innovation in electric mobility solutions because lithium-ion batteries continue to be the most important and expensive component of electric vehicles (EVs).

About Critical Minerals

- Critical minerals are those that are necessary for both national security and economic growth. Supply chain vulnerability and disruption may result from the scarcity of these minerals or even from their concentration of existence, extraction, or processing in a small number of geographic regions.
- They are essential parts of many technologies, including electronics, healthcare, defense, and clean energy (solar panels, wind turbines, and electric cars).
- Critical minerals are susceptible to disruptions in the supply chain and variations in price due to their concentration in a small number of nations.
- 30 such minerals are essential to India's technology and renewable energy sectors, according to the Ministry of Mines. They are - Antimony, Beryllium, Bismuth, Cobalt, Copper, Gallium, Germanium, Graphite, Hafnium, Indium, Lithium, Molybdenum, Niobium, Nickel, Platinum Group Elements (PGE), Phosphorous,

Potash, Rare Earth Elements (REE), Rhenium, Silicon, Strontium, Tantalum, Tellurium, Tin, Titanium, Tungsten, Vanadium, Zirconium, Selenium, Cadmium.

Challenges Related to Critical Minerals for India

- **India's Import Dependency -** There are serious economic and geopolitical hazards associated with India's over reliance on imports for essential minerals. Considering the geopolitical concentration of these resources, this dependency is especially worrisome.
- **Exploration Conundrum -** The country's geological surveys have identified potential deposits in areas like Jammu and Kashmir, but large-scale commercial extraction has not yet materialized. The recent discovery of 5.9 million tonnes of lithium reserves in Jammu and Kashmir, while promising, requires significant investment and time for development. Despite recent efforts, India's domestic exploration for critical minerals remains in its infancy.
- **Missing Links in Value Chains -** One major obstacle is India's poor ability to process and refine essential minerals. Although the nation has access to raw minerals, it must rely on other nations, mostly China, for refined products due to a lack of indigenous processing capabilities.
- **Balancing Extraction and Ecology -** There are frequently large environmental costs associated with the extraction and processing of essential minerals. Increased carbon emissions, water pollution, and habitat damage are all possible outcomes of mining activities. India, which is already battling environmental issues, must find a way to meet both its vital mineral needs and ecological preservation.
- **Price Volatility -** Extreme price swings in the crucial mineral market have an effect on India's competitiveness and industrial costs. Recent sharp increases in lithium costs have an impact on the economics of producing electric vehicles.

Measures for Better Management of Critical Minerals in India

- **Critical Mineral Diplomacy -** Creating International Coalitions for Resource Security India ought to step up its "critical mineral diplomacy" initiatives and form strategic alliances with nations that are abundant in natural resources. This might entail giving Khanij Bidesh India Limited more authority to negotiate government-to-government agreements.
- **Circular Mineral Economy -** Create a strong circular economy for essential minerals by: Recovering valuable minerals through the application of cutting-edge e-waste recycling technology. assembling end-of-life products that contain essential minerals into a national database.
- **Mineral Tech Leap -** Enhance technological proficiency in the mining and processing of key minerals by: Forming a key Minerals Technology Mission, modeled after the successful space and atomic energy initiatives. Providing tax breaks for research and development expenditures in vital mining technology.
- **GeoMapping Revolution -** Boost and update national mineral exploration initiatives by: Making use of cutting-edge geological mapping methods, such as artificial intelligence and machine learning. Completing thorough satellite and airborne studies of possible mineral-rich regions.

- **Green Mining Initiative -** Create environmentally friendly mining techniques suited to India's distinct mining environment: Putting strong environmental regulations into practice for mining vital minerals. Creating a thorough program for the rehabilitation of mined land.
- **Skill India for Critical Minerals -** In order to close the skills gap in the critical minerals industry, technical schools should offer specific courses on the geology, extraction, and processing of critical minerals. Opening centers for vocational training in areas with abundant mineral resources.
- **Mineral Processing Parks -** Create zones specifically for processing minerals to increase domestic capacity: Providing these zones with streamlined regulatory procedures and tax incentives. Provide top-notch water, power, and logistical support infrastructure.

Way Forward

To ensure sustainable management of critical minerals, India must enhance its domestic exploration and processing capabilities, foster international alliances for resource security, and promote a circular economy through advanced recycling technologies. Implementing green mining practices and robust environmental regulations will balance ecological preservation with mineral extraction. Additionally, investing in technological advancements and skill development in the critical minerals sector, along with establishing dedicated mineral processing zones, will reduce import dependency and stabilize supply chains, ultimately supporting India's economic growth and energy security goals.

SOURCE: ***The Financial Express***

[1.4] Taking Care of Elderly Population in India

[GS Paper 2 - Govt. Policies and Interventions, Human Resources]

Context - India's population is changing at a rate that needs immediate care. The rapidly aging population needs equal care, even though the youth bulge and demographic dividend of the nation receive a lot of attention in public discourse.

According to estimates, the percentage of older people in India will increase from 8.6% in 2011 to 20.8% by 2050. Aging quickly—in about 20–30 years as opposed to a century in Western nations—is surpassing the creation of sufficient social safety nets for the elderly.

Elderly Care Schemes in India

- **Atal Vayo Abhyudaya Yojana -** Establishing homes to improve quality of life for senior citizens by providing shelter, food, medical care, and entertainment. Encouraging states/UTs to create their own action plans for senior citizen welfare.

- **National Social Assistance Program -** Financial assistance to elderly, widows, and disabled persons.
- **National Program for Healthcare of Elderly -** Comprehensive healthcare for elderly at primary, secondary, and tertiary levels. Geriatric OPD, IPD, physiotherapy, and lab services in 713 districts.
- **Atal Pension Yojana -** Pension scheme for individuals aged 18-40, offering guaranteed pension at age 60.
- **Pradhan Mantri Awas Yojana -** Priority housing allocation for families with senior citizens on ground or lower floors.
- **DAY-NULM -** Shelters for urban homeless, including senior citizens.

Major Challenges faced by Elderly in India

- **Issues with Pensions -** India's pension system is dreadfully insufficient given the country's aging populace. Formal pension schemes cover only approximately 12% of the workforce (World Bank), meaning that the great majority of people will not have financial stability in their later years. The elderly impoverished receive a pitiful Rs. 200-500 per month from the National Social Assistance Programme (NSAP), hardly enough for subsistence.
- **Healthcare Hurdles -** The older population of India bears a heavy burden due to non-communicable diseases (NCDs). The majority of people over 60 in India have non-communicable diseases (NCDs) such diabetes, hypertension, and cardiovascular disorders, according to the Longitudinal Ageing Survey (LASI).
- **Unable to Cope up with Technology -** The senior population in India is becoming more and more marginalized in the digital divide as the country quickly digitizes. Essential services, such as banking and medical appointments, are increasingly being provided online. 86% of senior adults do not know how to operate a computer or digital device.
- **Elder Abuse -** Elder abuse is becoming a bigger issue in India, albeit it's frequently taboo. Data from Elders Helpline 1090 and Elderline 14567 shows that after the lockdown, elder maltreatment rose by 251%. Other commonplace practices include financial exploitation, neglect, and even physical abuse.
- **Housing Havoc -** In India, finding suitable and inexpensive accommodation for the elderly is a major problem. Retirement homes catering to the wealthy are springing up, while options for middle-class and lower-class seniors are scarce. There are safety hazards in the current housing stock because age-appropriate design elements like grab bars, emergency response systems, and ramps are missing.

Measures to Enhance Elderly Care in India

- **Boosting Silver Economy -** Launch a nationwide "Silver Skills" initiative to retrain and hire senior citizens in fields like child care, handicrafts, and mentoring. Build a government-backed microfinance program exclusively for senior business owners, and offer tax breaks to employers who hire employees over 60.
- **Tech-Empowered Elderly Care -** Start a national "Digital Dada-Dadi" campaign to increase senior citizens' digital literacy, taking into account all methods of reaching the last mile for digital penetration. Collaborate with digital firms to create easily

navigable applications and gadgets specifically designed for the elderly, emphasizing health tracking, social media integration, and necessary services.

- **Community-Care Hubs -** Create official "Varishtha Seva Kendras" (Senior Service Centers) in each rural panchayat and urban ward. These hubs would function as one-stop shops for senior citizens' needs, providing connections for social activities, legal assistance, pension services, and health examinations.
- **Improving Financial Security Net -** To promote retirement savings planning, consider offering a "Senior Citizen Savings Bond" with a higher interest rate. Provide more comprehensive, lower-cost, senior-specific health insurance plans that cover mental health and home care services.
- **Elder Rights Protection -** Create specialized "Elder Protection Units" in police stations to address senior exploitation and abuse cases. Establish a system of required reporting for bank employees and healthcare professionals to identify possible elder abuse incidents.
- **Age-Friendly Cities -** Create a national "Age-Friendly City" certification scheme that includes standards for services, transportation, and public areas that are accessible. Encourage cities to follow these rules by giving them more money and prestige. Important elements can be senior-friendly parks with exercise equipment, preferential seats in public transportation, and accessible restrooms.
- **Elderly Nutrition Mission -** Introduce a "Poshan for Elders" initiative that applies the kid nutrition program's winning formula to senior citizens. This would entail offering fortified meals via community kitchens, educating caregivers about nutrition, and conducting routine health examinations with an emphasis on nutritional status.

Way Forward

To address India's rapidly aging population, it is crucial to enhance social safety nets and healthcare services, promote digital literacy among seniors, and ensure financial security through improved pension schemes and targeted savings bonds. Establishing community-care hubs and age-friendly cities, along with specialized elder protection units, will provide comprehensive support. Additionally, launching initiatives like "Silver Skills" and "Poshan for Elders" will empower the elderly economically and nutritionally. By integrating these measures, India can create a more inclusive and supportive environment for its senior citizens, ensuring their well-being and dignity in the face of demographic changes.

SOURCE: ***The Indian Express***

[1.5] Rising Role of India in Global health Governance

[GS Paper 2 - Health, Govt. Policies and Interventions]

Context - With changes to the International Health Regulations and the continuation of talks for a Pandemic Treaty, the recent World Health Assembly signaled a major advancement in the governance of global health. The treaty's adoption is still up in the air, though.

The main source of conflict is the sharing of diseases and associated benefits; developing nations want fair access to diagnostics and vaccinations made from their genetic resources. To safeguard its interests in these negotiations, India, a significant actor in global health, needs to participate actively.

Lack of Global Census on the Pandemic Treaty

- **Equity Access -** The question of fair access to medications, treatments, and diagnostics during pandemics is at the center of the dispute. While high-income nations are reluctant to join such legally binding agreements, low- and middle-income countries (LMICs) are demanding assured access to a large share (at least 20%) of these resources.
- **Intellectual Property Rights and Property Transfers -** The management of technology transfer and intellectual property (IP) rights is a significant area of disagreement. LMICs are pushing for policies that would ease the transfer of technology and expertise to support domestic manufacturing of vaccines and medical supplies.
- **Financing and Resource Allocation -** The best way to finance pandemic planning and response is a hot topic of discussion, particularly in environments with limited resources. LMICs make the case that wealthy countries should dedicate significant, ongoing financial resources to the development and upkeep of strong health systems. High-income nations recognize the need for assistance but are wary of making indiscriminate financial commitments.
- **Sovereignty and National Autonomy -** Potential violations of national sovereignty worry a lot of nations. This is especially clear when debating the jurisdiction of the World Health Organization (WHO) in medical emergencies.
- **One Health Approach -** Reactions to the implementation of the One Health approach—which acknowledges the relationship between environmental, animal, and human health—have been conflicting. This comprehensive strategy is well-supported by many high-income nations, while other LMICs see it as an extra pressure on their already limited resources.
- **Geopolitical Tensions -** Deeper geopolitical conflicts and a lack of trust between states lie at the root of these technical problems. The Covid-19 epidemic, historical injustices in the regulation of global health, and the emergence of bioterrorism have strengthened north-south divides and stoked mistrust.

India's Role in Global Healthcare Efforts

- **Pharmaceutical Manufacturing -** India should concentrate on developing and modernizing its pharmaceutical production capacities in order to guarantee a steady supply of reasonably priced medications and vaccines around the world. Putting money into R&D will be essential to advance from generics to innovative drug discoveries in the pharmaceutical value chain.
- **Digital Health and Telemedicine -** India can establish itself as a pioneer in health technology by making the most of its digital health efforts, especially the National Digital Health Mission. To further cement this leadership, developing nations should pool their knowledge of creating and executing large-scale digital health systems.

- **Traditional Medicine and Integrative Healthcare -** India ought to support the integration of evidence-based research in ancient medical systems, such as Ayurveda, with contemporary healthcare. India may become a recognized leader in this area by spearheading international efforts to standardize and regulate practices related to traditional medicine.
- **Affordable Healthcare Models -** India must actively engage the international world in exchanging best practices from the implementation of expansive health insurance programs such as Ayushman Bharat. India may become a global leader in accessible healthcare by promoting cutting-edge, inexpensive medical technology and healthcare delivery models.
- **Global Health Security -** India should take advantage of its capacity to produce vaccines and its knowledge of handling infectious diseases to assume a leading role in ensuring the security of world health. It will be essential to contribute to international disease surveillance networks and early warning systems.
- **Promoting Research and Clinical Trials -** India could use its sizable and diversified population to advance moral and welcoming clinical trial procedures. India has the potential to become a major participant in international health research by spearheading studies on diseases common in the Global South.

Way Forward

To move forward, it is crucial for India to actively engage in the ongoing negotiations for the Pandemic Treaty, advocating for equitable access to diagnostics, treatments, and vaccines derived from genetic resources. By leveraging its strengths in pharmaceutical manufacturing, digital health, and traditional medicine, India can play a pivotal role in shaping global health policies. Additionally, fostering international collaborations, investing in research and development, and promoting affordable healthcare models will be essential for India to ensure its interests are safeguarded and to contribute significantly to global health security and equity.

SOURCE: ***The Hindu***

[1.6] Significance of Ethical Aspects of Artificial Intelligence

[GS Paper 3 - Artificial Intelligence, IT and Technology]

Context - With its superior data processing and prediction powers, artificial intelligence (AI), or the ability of machines to mimic human intelligence, has the potential to alter industries and improve human capacities. On the other hand, as AI becomes more pervasive in daily life, its ethical concerns require immediate consideration.

There are serious concerns about the technology's ability to reinforce prejudices, violate privacy, and destroy jobs. Furthermore, current legislative frameworks are frequently not kept up with the rapid speed of AI research, which makes concerns of accountability and responsible use more complex.

About Artificial Intelligence

- Artificial Intelligence (AI) is the ability of a computer or robot under computer control to carry out tasks that normally call for human intelligence and judgment. Certain AI systems are better at certain things than others, but no AI system can perform the entire range of tasks that a human can.
- The ability of AI to think and act in a way that maximizes the likelihood of reaching a specific objective is its primary characteristic. Deep Learning (DL) approaches enable automatic learning by analyzing vast amounts of unstructured data, such as text, photos, or video. Machine Learning (ML) is a subset of AI.
- Ethical AI, alternatively referred to as Moral or Responsible AI, is the creation and application of AI systems in a way that respects human rights, society values, and ethical precepts.
- It places a strong emphasis on using AI technology responsibly in order to minimize potential biases and harms while maximizing benefits to individuals, communities, and society at large.

Key Aspects of Ethical AI

- **Transparency and Explainability -** Users and stakeholders should be able to comprehend and explain the workings of AI systems through their design and implementation. This encourages responsibility and trust.
- **Fairness and Bias Mitigation -** By reducing biases and ensuring justice in AI models and algorithms, ethical AI seeks to stop discrimination against specific people or groups on the basis of characteristics such as gender, race, ethnicity, or socioeconomic status.
- **Privacy and Data Protection -** Upholding people's right to privacy, ethical AI promotes the safe and responsible processing of personal data, obtaining consent and adhering to applicable privacy laws and regulations.
- **Accountability and Responsibility -** The results of AI technology should be the responsibility of developers and organizations using them. It's crucial to have clear lines of accountability and processes in place for dealing with mistakes or negative effects.
- **Robustness and Reliability -** AI systems must be dependable, strong, and capable of operating consistently under many circumstances. It is necessary to put safeguards in place to deal with hostile attempts to influence or undermine the AI system.
- **Benefits to Humanity -** The development and application of AI should improve human welfare, address societal issues, and have a positive impact on the environment, economy, and society.

Ethical Concerns Associated with AI

- **Deepfakes and Misinformation -** A major danger to the dissemination of false information and misinformation is the growing complexity of deepfakes created by artificial intelligence.

- **Algorithmic Bias -** Large Language Models (LLMs) significantly reflect gender bias, homophobia, and racial stereotyping, according to a study by the United Nations Educational, Scientific, and Cultural Organization (UNESCO).
- **Challenges of Primary Source Representation -** In order to avoid missing out on primary sources such as archive papers and oral traditions, AI systems frequently rely on secondary materials, written mostly in English. Certain societies and cultures may be under- or incorrectly represented as a result of primary source neglect.
- **Data Privacy -** Privacy infringement and misuse are challenges raised by the acquisition and use of personal data for AI development. Additionally, widespread monitoring and the degradation of civil liberties may result from the increased dependence on AI for surveillance.
- **Issue of Black Box -** Since many AI models are intricate and hard to comprehend, it can be difficult to describe how they arrive at decisions. This lack of openness may make accountability more difficult.
- **Automation and Unemployment -** Concerns over economic inequality and job displacement arise from AI's capacity to automate jobs. The quick development of AI has the potential to upset the economy and present difficulties for workers and industries.
- **Data Ownership -** Ownership of personal data is a complicated ethical and legal matter. The growing dependence of AI systems on user-generated content raises concerns over data ownership and usage. It also brings up issues with intellectual property rights and copyright.
- **Environmental Ethics -** Artificial intelligence (AI) technology development and application have an impact on the environment, posing ethical and sustainable responsibility issues.

Measures to Address AI's Ethical Concerns

International Level

- **Global Alliance for Social Entrepreneurship -** The Schwab Foundation's Global Alliance for Social Entrepreneurship, in collaboration with Microsoft, unveiled a new project on AI for Social Innovation during the World Economic Forum 2024 in Davos.
- **EU AI Act -** In an effort to control the risks posed by AI systems and safeguard EU citizens' basic rights, the European Union has developed the first comprehensive AI regulation, known as the EU AI Act. Nations with their own AI laws or policies include Singapore, China, and Canada.
- **Effects by Tech Giants -** Among the businesses that have established responsible AI teams are Microsoft, Meta, Google, Amazon, and Twitter. These teams provide guidance on the security of AI-powered consumer goods, monitor their adherence to moral principles, and promote accountability.
- **UK AI Safety Summit -** The 2023 UK AI Safety Summit emphasized the necessity for international cooperation while tackling the safety and security elements of AI.

National Level

- **Advisory on AI Models -** In accordance with Information Technology Rules 2021, the Ministry of Electronics and Information Technology (MeiTY) released an advice on AI models and deepfakes in 2024.
- **IndiaAI Mission -** Through smart public-private partnerships, the IndiaAI goal seeks to develop a strong ecosystem that will promote AI innovation.
- **Responsible AI for Youth -** "Responsible Artificial Intelligence (AI) for Youth" is a national program that the government has introduced for young people.
- **National Strategy on AI -** The National Strategy on Artificial Intelligence (NSAI), published by NITI Aayog in 2018, provided a blueprint for the safe and inclusive implementation of AI in India's five public sectors.

Way Forward

To ensure AI's benefits while addressing its ethical concerns, a multi-faceted approach is essential. This includes robust regulatory frameworks, continuous ethical oversight, and international cooperation. Promoting transparency, fairness, and accountability in AI development and deployment will help mitigate risks and enhance trust, ensuring AI's positive impact on society.

SOURCE: ***The Hindu***

2. Daily Current Affairs

[2.1] Dark Oxygen Discovery

Syllabus: Science & Technology [GS Paper - 2]

Context:

- Researchers have got a breakthrough as they discovered that there is a new kind of oxygen known as 'Fury Oxygen' found in the pitch black areas of space. This new substance has been called 'dark oxygen'; scientists now want to know more about this .

Description

- **Existence in space**: Dark oxygen exists in cold, dark molecular clouds of space that will readily destroy what is known as oxygen.
- **Unique properties**: Similar to dark matter, dark oxygen has contrasting characteristics from the standard oxygen through the type of bonding and actions.
- **Detection methods**: To find out dark oxygen's singing voice, scientists used several forms of spectroscopy to listen to the 5,000K boiling, decay rate, and other variables that come with dying stars.

Significance

- **Challenging existing theories**: Dark oxygen's discovery alters the academic knowledge of the properties of oxygen in space, as well as its utilization, and requires modifications to the theories.
- **Implications for astrobiology**: Mother Nature and particularly dark oxygen that exists in space gives rise to a number of concerns when it comes to the niche of the emergence of life on earth and the rest of the universe.
- **New research avenues**: Said discovery creates additional possibilities to investigate the behavior of dark oxygen in combination with other particles; prescribes new tasks for the further investigation.

Future Directions

- **Further characterization**: It is decided that knowing more about the properties and behavior of dark oxygen is scientists' next goal.

- **Astrochemical implications**: Scientists will uncover how dark oxygen helps in the formation of stars or planets in a galaxy or a system.
- **Potential applications**: Substances with properties of dark oxygen could open new forms of using matter in various fields including material science and medicine.

The Discovery Process

- It must be noted that the existence of dark oxygen was established with the help of spectroscopic methods that are rather sophisticated.
- Scientists employed high-tech cameras to look for the 'electrical resonant frequency' of dark oxygen in cosmic molecular compounds.

Features and implications for the concept(s) that define our universe

- Dark oxygen, as an actual phenomenon, has a potential monumental impact regarding what is being known about the universe.
- It questions the modern concepts of how oxygen works in space as well as provides new questions about the creation of life.

Potential Applications

- It may be possible that the various properties of the synthesised dark oxygen may have special uses in various areas such as material science and even medicine.
- Investigators are keen interested on the possibility of applying dark oxygen.

Conclusion

- It can therefore be said that the discovery of dark oxygen means new wide area of study in the cosmos has just opened up.
- As researchers deeply investigate this phenomenon, man is likely to discover more of the paradoxes of the universe and the evolution of life.

Source: The Hindu

UPSC Mains Practice Question:

Q. Discuss the significance of the discovery of dark oxygen in the context of astrobiology and its potential implications for our understanding of the origins of life on Earth and elsewhere in the universe.

[2.2] Disability Reservations

Syllabus: Governance [GS Paper - 2]

Context:

- Practical quotas involving the disabled are a significant element aimed at helping individuals with any sort of disability get opportunities in the society.
- These reservations ensure that those with disabilities are not discriminated against based on the constitutional provision on discrimination and exclusion that persons with disabilities have undergone for instance in aspects of education and employment. However, the disability reservations present issues and controversies that need to be dealt with to enable the idea to be effective.

Significance of Disability Reservations

Promoting Inclusivity

- In the following way disability reservations are a form of affirmative action: it is a procedure that guarantees equal opportunities for people with disabilities.
- The focus is on the inclusiveness of such programming as it enhances the desirability of social equity in a society.

Addressing Historical Discrimination

- Affirmative-action policies relate to disability because they correct for past discrimination and exclusion of disabled persons.
- There is a history of discriminating against disabled people and not allowing them to participate in various activities.
- Thus, reservations assist in compensation for these wrongs.

Empowerment

- All members of disabled people benefit from disability reservations because they allow the disabled persons to fully enjoy their civil freedoms as well as maximize the potential of such a person.
- In so doing, reservations help persons with disabilities to achieve the full potential of participating in the society.

Challenges and Criticisms

Quota System

- Some of the critics said that by using the quota system it becomes hard to change or may not meet the needs of some people.
- However, this criticism is especially unfounded as it doesn't pay attention to the need to guarantee the minimum serving and participation of individuals with disabilities among them.

Abuse of Reservations

- Some people may outright fake their disability for various reasons or use a disability in a way that may not be fair to those who genuinely have one.
- But all these can be combated through having very rigorous standards of qualification for the beneficiaries and not forgetting vigorous mechanisms of supervision.

Limited Scope

- Concerns might be only one or a few compared to other essential issues which require inclusion.
- However, this limitation can be deplored, and it can be stated that the implementation of large-scale inclusion measures can counter this effect.

Defending Disability Reservations

Contextualizing Reservations

- It must be remembered that these reservations must be viewed within the context of past and present discrimination environments.
- Such contextualization is essential to acknowledge the necessity of reservations and their purpose to advocate for native people's rights.

Implementing Inclusive Measures

- That is why accessibility and accommodations can be seen as complementary to reservations to include more people.
- It is essential to point out that the indicated measures enable individuals with disabilities to access opportunities to the maximum extent.

Monitoring and Evaluation

- That is why evaluation and monitoring, seeming to be ordinary procedures, can contribute to the prevention of abuse and effective use of the plan.
- This monitoring makes sure that the reservations that are made get to meet the set goals and objectives that are expected of them.

Conclusion

- Reservations for the disabled, therefore, are important assets in the fight for adequate opportunities. Even if the hardships and negative perceptions are present, it is still possible to overcome them with help of contextualization, integration, and proper usage.
- When supporting disability reservations, people may ensure the formation of a society for equal opportunities for every individual in a community disregarding their disability status.

Source: The Hindu

UPSC Mains Practice Question:

Q. Critically evaluate the significance of disability reservations in promoting inclusivity and equal opportunities in India. How can the challenges and criticisms associated with these reservations be addressed to ensure their effective implementation?

[2.3] South Africa's new law on Climate Change

Syllabus: International Relations [GS Paper - 2]

Context:

- As one of the biggest emitters of greenhouse gases in the top fifteen countries today, South Africa utilizes especially coal.
- It has for instance suffered disastrous affects of natural conditions such as droughts floods and heat bolls.
- The two global frameworks; namely, the Paris Agreement and the UNFCCC have encouraged nations to act on climate change.

About:

- The Climate Change Act is an act of parliament or a new law passed recently under the leadership of president Cyril Ramaphosa to combat climate change.
- It seeks to regulate the emission of greenhouse gases as well as respond to the consequences of climate change.

Description:

- **Mandatory Emissions Curbs**: Pollutants are restricted by law with a greater degree of prescribed stringency for large industries that rely heavily on fossils.
- **Climate-Adaptation Plans**: Each town and city has to prepare and publish an adaptation plan, which brings a national climate change response.
- **Emissions Targets**: You would set an emissions target for each over-emitting government sector, and each minister of the sector has to implement measures for emissions reductions.
- **Carbon Budget**: The environment minister is also requires to assign a carbon budget to any organization emitting excessive greenhouse gas where a limit on emissions must be assigned for a specific period.

Significance:

- The law proves that South Africa is ready and willing to join the international community in combating climate change.
- This makes a good example to emulate for other developing nations that I have not mentioned above.
- The law has the potential of lowering greenhouse gases emission and climate change impacts in South Africa.

Pros:

- Fights the constant release of the greenhouse gases and consequently, the climate change impacts.
- Supports initiatives on the protection of environment, as well as transition to the green economy.
- Contributes to the development of South Africa's foreign policy, with a view to nurturing its image of a responsible global citizen.

Cons:

- Chicago may cause higher expenses to industries as well as the customers.
- May result to unemployment especially in the enterprises processes that rely on the fossil fuel especially the industrial processes.
- Is said to call for huge resource and capacity commitments for it to be implemented.

Challenges:

- Stating the facts and receiving the reductions in emissions.
- The mixed economy argument of Gendall seeking to have enhanced economic gain and at the same time curb the effects attributed to climate change.
- In relation to the possible social and economical impacts on vulnerable groups.

Conclusion/Way Forward:

- The Climate Change Act is thus another step towards sustainability in the republic of South Africa.
- This is also the case since the formulation of basic education policies involves cooperation, support, and the development of human and material assets.
- However on the positive side the law can be useful for not only the South African country but for the whole world permitting the transition towards a low-carbon economy.

Source: **The Hindu**

UPSC Mains Practice Question:

Q. Analyze the significance of South Africa's Climate Change Act in addressing the global challenge of climate change. How does the Act balance economic development with environmental sustainability? What are the potential challenges in implementing the Act, and how can they be addressed?

[2.4] Norms for Agarwood Export

Syllabus: Environment [GS Paper - 3]

Context:

The exportation of Agarwood has some issues such as overexploitation of the resource, tension in the illegality of logging, and climate change that hampers the sustainability of Agarwood. For this, measures such as CITES and other practices help in dealing with this element. Market awareness and trading policies contribute to the sustainability of the markets which determine the current trade with the future supply of the products.

Description

- Existence in trade: The agarwood is used as a perfume and has medicinal value to it, thus the demand it enjoys across the globe especially in the Middle East, China and Japan.
- Unique properties: Hence, agarwood possess specific characteristics such as the resinous heartwood and scent that is determined by the biological and ecological factors.
- Harvesting methods: Herbs utilized in aromatics are Aquilaria trees, were cut by sustainable forest management practices, but there are some defects, ie loggers are not authorized by some Aquilaria trees continue to be cut despite replenishment.

Significance

- Conservation status: According to the CITES lists of animals and plants, agarwood falls under Appendix II this is so to control international demand for the products in a way that does not negatively impact the populations.
- Economic importance: The trade of agarwood has a major economic impact within the regional markets especially in the areas where the trees grow abundantly.
- Cultural significance: In many societies, agarwood has cultural and religious value; it is through traditional medicine, incense, and rites.

Future Directions

- Sustainable harvesting: The major stress shall be placed upon the fight for sustainable measures provided within the sphere of replanting and various forms of certification.
- CITES compliance: Hence, all the related exporters had to adhere to the exemplifications of the CITES arrangements including the permission for the permits and quotas.
- Market regulation: This control will be directly or indirectly in the hands of the governments since they will not allow over exploitation and balanced representation of agarwood goods.

Challenges

- Over-harvesting: Based on threats of over exploitation, agarwood is on the frontline when it comes to the high degree of demand against the relatively low levels of supply.
- Illegal logging: But it hinders sustainability of the process and the logs as well as smuggles the species thus putting the program at a great risk.

- Climate change: This in one way or the other affects the growth of the Aquilaria trees through one or the other form of Global warming hence lesser production of resin a raw material used in making agarwood.

Conclusion

- The standard to export agarwood is for the international market the product as a result considering the cutting down needed to obtain it.
- But, what kind of thinking is applied to that, a fact that with the increase in the desirability of agarwood, how it is obtained and how it is marketed can also present some of the seemingly vices associated with this product.

Source: The Hindu

UPSC Mains Practice Question:

Q. Discuss the significance of agarwood and the challenges associated with its export. How can sustainable harvesting and trade practices ensure the long-term viability of this valuable resource?

[2.5] Static Electricity in Pollination

Syllabus: Science and Technology [GS Paper-3]

Context

New research has revealed that butterflies and moths accumulate significant amounts of static electricity while in flight, allowing them to attract pollen from flowers without even touching the plants. This finding suggests that these insects are highly efficient pollinators and play a crucial role in the functioning of ecosystems.

What is Pollination?

Pollination can be defined as the act of transferring pollen from the anther of one flower to the stigma of another flower, or to the stigma of the same flower in the case of self-pollination. This transfer is crucial for fertilization, as the pollen contains male gametes that fuse with female gametes found in the ovules of the flower. The successful union of these gametes leads to the formation of seeds, which are essential for the propagation of plants.

Accumulation of Static Electricity

- The study, led by Dr. Sam England from the University of Bristol, involved measuring the electrostatic charges of 269 butterflies and moths across 11 different species native to five continents. The researchers found that as these insects fly, they build up positive charges due to friction with the air, similar to how hair becomes charged when rubbed against a balloon.
- The pollen grains, which are usually negatively charged, are then attracted to the positively charged insects. This electrostatic attraction allows the pollen to jump through the air and stick to the butterflies and moths, even if they don't physically touch the flowers.

Variations in Static Electricity Levels

- The study also revealed that different species of butterflies and moths carry varying amounts of static electricity, depending on their ecology. Factors such as whether they visit flowers, inhabit tropical environments, or are active during the day or night were found to correlate with the amount of static charge they accumulate.
- This evidence suggests that the quantity of static electricity an animal accumulates is an adaptive trait that can be influenced by natural selection. As Dr. England explains, "By establishing electrostatic charging as a trait upon which evolution can act, it opens up a great deal of questions about how and why natural selection might lead to animals benefiting or suffering from the amount of static electricity that they accumulate."

Increased Pollination Efficiency

- The researchers found that butterflies and moths can attract pollen from several millimeters or even centimeters away, without physically touching the flowers. This means that they can pollinate plants more efficiently, as they don't need to make direct contact with the pollen-bearing structures.
- Dr. England states, "We've discovered that butterflies and moths accumulate so much static electricity when flying, that pollen is literally pulled through the air towards them as they approach a flower. This means that they don't even need to touch flowers in order to pollinate them, making them very good at their jobs as pollinators, and highlighting just how important they might be to the functioning of our flowery ecosystems."

Practical Applications and Future Research

- The findings of this study have several practical implications. They suggest that technology could be developed to artificially increase the electrostatic charges of pollinators or pollen, potentially improving pollination rates in both natural and agricultural settings.
- Additionally, understanding how static electricity influences the interactions between flowering plants and their pollinators can inform conservation efforts aimed at preserving diverse ecosystems that rely on these critical relationships.
- Future research in this area could involve studying a wider range of animal species to determine how much static electricity they accumulate and how it relates to their ecology and lifestyle. This would help scientists better understand the link between evolution and static electricity in the context of pollination.

Conclusion

The discovery that butterflies and moths can attract pollen using static electricity highlights their importance as pollinators and the complex interactions within ecosystems. This research opens up new avenues for understanding the role of electrostatic forces in plant-pollinator relationships and their potential applications in agriculture and conservation.

Source: Science

UPSC Prelims Practice Question

Q. Consider the following statements regarding pollination:

1. **Pollination is the transfer of pollen grains from the male anther to the female stigma in flowering plants.**
2. **Wind pollination is typically seen in plants with brightly colored flowers and a strong fragrance.**
3. **Insect pollination usually involves flowers that are large, have nectar guides, and emit strong fragrances.**

Which of the statements given above are correct?

(a) 1 only
(b) 1 and 2 only
(c) 2 and 3 only
(d) 1 and 3 only

Ans- D

[2.6] India, US sign Cultural Property Agreement

Syllabus : International Relations [GS Paper-2]

Context:

On July 26, 2024, India and the United States formalized their commitment to protecting cultural heritage by signing the first-ever Cultural Property Agreement (CPA). This landmark agreement aims to combat the illicit trafficking of Indian antiquities and facilitate the repatriation of cultural property to its country of origin. The signing took place during the 46th World Heritage Committee meeting at Bharat Mandapam in New Delhi, marking a significant step in international cooperation for cultural preservation.

Objectives of the Cultural Property Agreement

- The primary goals of the CPA are to prevent the illegal trade of cultural property and simplify the process for returning looted and stolen antiquities.
- This agreement aligns with the 1970 UNESCO Convention on the Means of Prohibiting and Preventing the Illicit Import, Export, and Transfer of Ownership of Cultural Property, to which both nations are signatories.
- By establishing this agreement, India joins a group of 29 countries that have similar partnerships with the United States.

Key Signatories and Participants

- The agreement was signed by Shri Govind Mohan, Secretary of the Ministry of Culture, and H.E. Eric Garcetti, the U.S. Ambassador to India.
- The signing ceremony was attended by Shri Gajendra Singh Shekhawat, Union Minister of Culture and Tourism, who emphasized the importance of the CPA in safeguarding India's rich cultural heritage. He highlighted that the agreement represents a new chapter in preventing the illegal trafficking of cultural property and retrieving antiquities.

Historical Context and Repatriation Efforts

- India has a long history of cultural heritage theft, with many antiquities smuggled out of the country before the ratification of the 1970 UNESCO Convention. Since 1976, India has successfully repatriated 358 antiquities, with 345 returned since 2014. The recent agreement is part of a broader strategy under India's foreign policy, which has increasingly focused on cultural diplomacy and the protection of cultural property.
- During a state visit to the U.S. in June 2023, Prime Minister Narendra Modi expressed appreciation for the repatriation of Indian artifacts, further solidifying the commitment between the two nations to enhance cooperation in cultural heritage protection.

Agreement Details and Provisions

- The CPA includes specific provisions that restrict the importation of certain archaeological and ethnological materials into the United States.
- These materials range from artifacts dating back 1.7 million years to those from 1947 CE.
- The agreement also outlines procedures for the swift repatriation of these materials if they are seized in the U.S., ensuring that Indian cultural artifacts can be returned efficiently.

Significance of the Agreement

- The signing of the CPA is not merely a legal formality; it represents a profound commitment to justice and cultural preservation. Ambassador Garcetti stated, "This cultural property agreement is about two things. First and foremost, it's about justice – returning to India and to Indians, what is rightfully theirs." This sentiment underscores the importance of recognizing and rectifying historical injustices related to cultural heritage.
- The agreement also enhances the relationship between India and the U.S., fostering a deeper understanding of each other's cultural significance. It serves as a model for international cooperation in cultural heritage protection, encouraging other nations to engage in similar agreements.

International and Bilateral Impact

- The U.S. has established similar cultural property agreements with multiple countries, demonstrating its commitment to protecting cultural heritage worldwide.
- The CPA with India signifies enhanced cooperation and swift action in recovering Indian artifacts from the U.S.
- This partnership will likely inspire other nations to pursue similar agreements, contributing to a global movement against the illicit trafficking of cultural property.

Future Directions and Challenges

- While the signing of the CPA is a significant milestone, challenges remain in the enforcement and implementation of the agreement. Continuous efforts will be required to monitor and prevent the illicit trade of cultural property. Both nations must work collaboratively to establish effective mechanisms for the swift return of artifacts and to educate the public about the importance of cultural heritage.
- Moreover, the agreement sets a precedent for future collaborations between India and the U.S. in various cultural domains, including education, tourism, and heritage conservation. By fostering a deeper understanding of each other's cultures, both countries can strengthen their diplomatic ties and promote mutual respect.

Conclusion

The Cultural Property Agreement between India and the United States marks a pivotal moment in the global effort to protect cultural heritage. By addressing the illicit trafficking of antiquities and facilitating their repatriation, the CPA not only serves justice but also enriches the cultural narratives of both nations. As the world becomes increasingly interconnected, such agreements will play a crucial role in preserving the cultural legacies that define humanity. The commitment demonstrated by both countries sets a powerful example for international cooperation in safeguarding cultural heritage for future generations.

Source: **The Hindu**

UPSC Prelims Practice Question

Q. Which of the following statements about the India-US Cultural Property Agreement are correct?

1. **It aims to prevent the illegal trafficking of cultural property and facilitate the return of looted and stolen antiquities to India.**
2. **It was signed during the 46th World Heritage Committee meeting in New Delhi by the US Ambassador to India, Eric Garcetti, and the Indian Union Culture Secretary, Govind Mohan.**
3. **The agreement aligns with the 1970 UNESCO Convention on the Means of Prohibiting and Preventing the Illicit Import, Export, and Transfer of Ownership of Cultural Property.**
4. **With this agreement, India joins the ranks of 30 existing US bilateral cultural property agreement partners.**
5. **The agreement restricts the importation of certain archaeological and ethnological materials into the United States dating back to 1.7 million years.**

Select the correct answer using the codes given below:

a) 1, 2, 3, and 4 only

b) 1, 2, 3, and 5 only

c) 1, 3, 4, and 5 only

d) 1, 2, 3, 4, and 5

Answer: B

[2.7] Ethanol Production Shift: Sugarcane to Grains in India

Syllabus: Science and Technology [GS Paper-3]

Context

In a significant development for India's biofuel sector, ethanol production for blending with petrol has shifted predominantly from sugarcane to maize and damaged foodgrains. This transition marks a pivotal moment in the country's approach to biofuels, reflecting both agricultural policy changes and economic considerations. This article explores the implications of this shift, the factors driving it, and the potential benefits and challenges associated with increased grain-based ethanol production.

Overview of Ethanol Production in India

Ethanol, a renewable fuel made from various feedstocks, plays a crucial role in India's energy strategy. The government has set ambitious targets for ethanol blending in petrol, aiming for a 20% blending ratio by 2025. Historically, sugarcane has been the primary source of ethanol in India, primarily derived from molasses, a byproduct of sugar production. However, recent statistics indicate a significant shift in feedstock sources for ethanol production.

Current Statistics

As of June 30, 2024, sugar mills and distilleries in India supplied a total of 401 crore litres of ethanol to oil marketing companies. Notably, 211 crore litres (52.7%) of this ethanol was produced from maize and damaged foodgrains, while sugarcane-based feedstocks accounted for the remaining 190 crore litres. This marks the first time that the contribution of grains to India’s ethanol production has

surpassed 50%, a dramatic increase from just 27.1% in the previous supply year (2022-23) and 5% in 2018-19.

Factors Driving the Shift

- **Government Policies: The Indian government's policies have significantly influenced the shift towards maize and damaged food grains as primary ethanol feedstocks. In 2018-19, the government enabled sugar mills to produce ethanol from B-heavy molasses and whole cane juice, which increased production capacity. However, recent restrictions on the use of cane juice and B-heavy molasses due to concerns over sugar and cereal inflation have prompted a pivot towards grains.**
    - Moreover, the government has incentivized the production of ethanol from maize by fixing a higher ex-distillery price of Rs 71.86 per litre for maize-based ethanol, compared to lower prices for other feedstocks. This financial incentive has encouraged distilleries to invest in multi-feedstock facilities capable of processing both sugarcane and grains.
- **Surplus Grains: India's agricultural landscape has produced a surplus of maize and damaged foodgrains, particularly broken rice that is unfit for human consumption. These surplus stocks provide an ample and cost-effective source for ethanol production, reducing waste and enhancing resource utilization.**

The Ethanol Production Process

The production of ethanol from maize and damaged foodgrains involves several steps:

1. **Preparation:** Grains are first milled to break down the starch into simpler sugars.
2. **Fermentation:** Yeast is added to the prepared mash, which ferments the sugars into ethanol and carbon dioxide.
3. **Distillation:** The fermented mixture is distilled to separate ethanol from other components.
4. **Dehydration:** Finally, the ethanol is dehydrated to achieve a high purity level suitable for blending with petrol.

This process differs from sugarcane-based ethanol production, where sucrose is directly fermented. The conversion of starch from grains into fermentable sugars adds complexity to the production process but allows for the utilization of a broader range of feedstocks.

Economic Implications

The shift towards maize and damaged foodgrains for ethanol production presents several economic advantages:

- **Cost-Effectiveness:** Utilizing surplus grains reduces production costs and minimizes waste, contributing to a more sustainable agricultural economy.
- **Job Creation:** Expanding the ethanol production sector can create jobs in agriculture, processing, and distribution, contributing to rural development.
- **Energy Security:** Increasing the share of ethanol in petrol reduces dependence on fossil fuels, enhancing energy security and promoting environmental sustainability.

Environmental Considerations

While the shift to grain-based ethanol has economic benefits, it also raises environmental concerns. The cultivation of maize and other grains for ethanol production could lead to increased agricultural inputs, such as fertilizers and pesticides, which may have adverse effects on soil and water quality. Moreover, the conversion of land for grain production could impact biodiversity and food security if not managed sustainably.

Challenges Ahead

Despite the potential benefits, several challenges must be addressed to ensure the successful implementation of grain-based ethanol production:

1. **Infrastructure Development:** Expanding the capacity for grain processing and ethanol production requires significant investment in infrastructure, including distilleries and transportation networks.
2. **Market Stability:** Fluctuations in grain prices could impact the economics of ethanol production. Ensuring stable prices for farmers and producers will be crucial for the long-term viability of the sector.
3. **Regulatory Framework:** A clear and supportive regulatory framework is necessary to facilitate the growth of the ethanol industry while addressing environmental and social concerns.
4. **Public Awareness:** Educating stakeholders, including farmers and consumers, about the benefits and challenges of grain-based ethanol production will be essential for gaining public support and ensuring successful implementation.

Conclusion

The transition from sugarcane to maize and damaged foodgrains as the primary feedstock for ethanol production marks a significant milestone in India's biofuel strategy. This shift reflects the government's commitment to enhancing energy security, promoting sustainable agriculture, and reducing waste. While the economic and environmental implications of this transition are promising, addressing the associated challenges will be critical for the long-term success of the ethanol industry in India. By fostering innovation and collaboration among stakeholders, India can position itself as a leader in the global biofuels market while ensuring a sustainable and prosperous future for its agricultural sector.

Source: The Indian Express

UPSC Prelims Practice Question

Q. Consider the following statements regarding ethanol production in India:

1. **Ethanol can be produced from both sugarcane and grains such as maize and rice.**
2. **The Indian government has set a target of 20% ethanol blending with petrol by 2025.**
3. **Shifting ethanol production from sugarcane to grains aims to reduce the agricultural sector's dependency on sugarcane.**

Which of the above statements is/are correct?

a) 1 only
b) 1 and 2 only
c) 2 and 3 only
d) 1, 2, and 3

Ans. - D

[2.8] Caller ID Spoofing

Syllabus - Security [GS Paper-3]

Context

Recently it is witnessed that Caller ID spoofing techniques are being used by the fraudsters nowadays.

About

- It is a way with which the phone numbers that a call seems to originate from can be falsified.
- Spoofing techniques have been honed by enthusiasts, telemarketers, and fraudsters alike, through the years.
- They use caller ID spoofing broadly speaking to shield their identification whilst engaging in illicit activity.
    - At times, caller ID spoofing is used by these individuals to carry out social engineering attacks, where the spoofed caller ID is abused for the implicit trust that the receiving party associates with it.
    - Caller ID spoofing can also be used to bypass standard call blockading structures, and even for exploiting vulnerabilities in insecure Interactive Voice Response (IVR) systems.
- **Concern:** Telecommunication carrier providers lose revenue, customers which might be defrauded because of a scam call abusing a spoofed caller ID lose money, and regulation enforcement has a harder time investigating crimes wherein spoofed caller IDs are used.

Tackling Scam Calls

- The International Telecommunications Union (ITU) is a unique UN corporation centered on enhancing and standardising worldwide information and verbal exchange technology.
- The ITU was at the start established as the International Telegraph Union in 1865, plenty earlier than the UN existed, and of which India has been a member on the grounds that 1869 onward.
- In 2021, the ITU posted a technical file on countering caller ID spoofing.
- While this record does not have any mandatory provisions, it does offer a reference to the use of Public Key Infrastructure (PKI) based authentication which will be implemented with the aid of Indian telecom operators to restore caller ID spoofing for true.
- The Telecommunications Act, 2023 allows the Union Government to take over control and operation of any telecommunication provider or network during times of “emergency.”

Conclusion

- Fixing the technical and implementation issues of caller ID spoofing may have an outweighed effect for all stakeholders.
- For clients, fixing caller ID spoofing will reduce spam and fraud calls, and will absolutely eliminate fraud that relies on fake illustration of one’s identification via phone numbers.
- For telecommunications carriers, it's going to save sales that would otherwise be misplaced, and for the Government and therefore the public, it would bring about revenue that could make contributions to the Indian financial system.

Source: ***The Hindu***

Mains Practice Question

1. ***"Digital India requires strong focus on cyber security." Discuss the challenges faced by cyber security and suggest ways to increase cyber expertise in India. (250 words)***

- Recently it is witnessed that Caller ID spoofing techniques are being used by the fraudsters nowadays.
- It is a way with which the phone numbers that a call seems to originate from can be falsified.
- Spoofing techniques have been honed by enthusiasts, telemarketers, and fraudsters alike, through the years.
- They use caller ID spoofing broadly speaking to shield their identification whilst engaging in illicit activity.
    - At times, caller ID spoofing is used by these individuals to carry out social engineering attacks, where the spoofed caller ID is abused for the implicit trust that the receiving party associates with it.
    - Caller ID spoofing can also be used to bypass standard call blockading structures, and even for exploiting vulnerabilities in insecure Interactive Voice Response (IVR) systems.
- **Concern:** Telecommunication carrier providers lose revenue, customers which might be defrauded because of a scam call abusing a spoofed caller ID lose money, and regulation enforcement has a harder time investigating crimes wherein spoofed caller IDs are used.

[2.9] Supreme Court on States' Power to Tax Minerals

Syllabus - Polity [GS Paper-2]

Context

A nine-judge Constitution Bench of the Supreme Court in, Mineral Area Development Authority v M/s Steel Authority of India, recently held that states have the power to levy tax on mines and minerals.

About

- The dispute originated from the enactment of the Mines and Minerals (Development and Regulation) Act, additionally referred to as MMDR Act by the Union Government in 1957, which brought the control of mines and minerals under the Union government's jurisdiction.
- Section nine of the Act, requires people who acquire rentals to conduct mining activities to "pay royalty in appreciation of any mineral removed" to the man or woman or organization who leased the land to them.

What is Royalty?

- Royalties check with the prices paid to the owner of a product in alternate for the right to apply that product.
- For instance, if a film studio wants to use an existing piece of music by a specific artist in their new film, they will have to pay a royalty fee that goes to the artist.

Difference Between Royalty and Tax

- Earlier in 2021, the Supreme Court of India had delineated the distinction among 'royalty' and 'tax.'

- **Royalty:** It originates from an agreement between events. It is a reimbursement paid for the rights and privileges loved with the aid of the grantee.
    - The royalty value has a right away relationship with the benefit or privilege conferred upon the grantee.
    - It is particular to the agreement and is often related to the exploitation of assets or utilization of a privilege granted by the grantor.
- **Precedents:** The Court referenced several cases, which includes Hingir-Rampur Coal Co. Ltd. Vs. State of Orissa (1961), State of West Bengal vs. Kesoram Industries Ltd. (2004), and others, to establish that royalties are contractual duties with direct blessings.
- **Tax:** It is imposed below a statutory power without connection with any unique advantage conferred on the payer. It is enforced by law and does not require the taxpayer's consent.
    - Taxes are imposed for public purposes with non unique advantage to the payer. They are part of the common burden borne by all residents.
    - Unlike royalties, taxes do not involve a quid seasoned quo arrangement. The fee is obligatory and no longer linked to any specific privilege or benefit.
- **Precedents:** The Court referred to several instances, consisting of the State of Himachal Pradesh vs. Gujarat Ambuja Cement Ltd. (2005) and Jindal Stainless Ltd. Vs. The State of Haryana (2017), to focus on the characteristics of taxes.

Supreme Court Verdict

- The Supreme Court held that the “royalty” collected by state governments under Section 9 of the Mines and Minerals (Development & Regulation) Act, 1957 (MMDRA) isn't a tax.
- The responsibility to pay royalty arises from contractual agreements between the lessor and lessee and is not supposed for public functions; alternatively, it serves as repayment for the specific use of mineral assets.
- Contractual payments made to the government cannot be equated to taxes.
- The judgment overruled the decision of the case in India Cement Ltd. V State of Tamil Nadu (1989), which had declared that royalty is a tax.

Source: ***The Hindu***

Mains PYQ

1. ***Despite India being one of the countries of Gondwanaland, its mining industry contributes much less to its Gross Domestic Product (GDP) in percentage. Discuss. (2021)***

- A nine-judge Constitution Bench of the Supreme Court in, Mineral Area Development Authority v M/s Steel Authority of India, recently held that states have the power to levy tax on mines and minerals.
- The dispute originated from the enactment of the Mines and Minerals (Development and Regulation) Act, additionally referred to as MMDR Act by the Union Government in 1957, which brought the control of mines and minerals under the Union government’s jurisdiction.
- Section nine of the Act, requires people who acquire rentals to conduct mining activities to “pay royalty in appreciation of any mineral removed” to the man or woman or organization who leased the land to them.

[2.10] Transit-oriented Development Plan for 14 Large Cities

Syllabus - Infrastructure [GS Paper-3]

Context

Recently the government proposed a transit-oriented development plan for 14 large cities with a population of over 30 lakh.

About

- It is a planning and layout approach aimed toward developing sustainable urban environments. It specializes in compact, mixed-use groups targeted round top notch public transportation systems.
- TOD specializes in creation of high density blended land use development within the sector of transit stations.

Need for a National TOD Policy

- As the cities are experiencing speedy growth, transit systems like metro rail, BRTS, and so on. Are being carried out to cater to the developing travel demand.
- National TOD policy could serve as suggestions and play a catalytic role in formulating state/ city level policies for promoting transit oriented development.
- National TOD policy shall be a guiding report for the Central Government ministries/ departments/ corporations to ensure their schemes, policies, and so on. Encourage TOD in cities, especially people with upcoming mass transit systems.

Significance of Transit-oriented Development

- Promoting higher densities and the awareness of jobs within enormously small regions, TOD creates agglomeration effects tested to boost a town's competitiveness.
- Compact urban development and extremely good public transit additionally together toughen every other: mass transit can support the huge passenger flows that come with high density development, while the attention of jobs.
- Proximity to mass transit improves access to TOD neighborhoods, boosting their attractiveness and growing actual property value.
- When placed in areas which might be much less exposed to natural hazards, the TOD method can enhance resilience to disaster risks by assisting high-density housing and activities in lower-risk zones.
- By concentrating jobs, services, and housing inside the catchment area of transit stations, TOD makes public shipping a more attractive and green option, at the same time as reducing dependence on private cars and promoting shorter commutes.

Three Values (3V) Framework

- A new report by the World Bank proposes the "3 values" (3V) Framework for TOD, which lets in choice makers to better apprehend the linkages between connectivity, accessibility, area best, and marketplace capacity values around a given station.
- The node value describes the significance of a station within the public transit community based on passenger visitors, connections with other delivery modes, and centrality inside the network.
- The place value displays the first-class and beauty of the vicinity across the station. Factors include the diversity of land use; the supply of crucial services along with colleges and healthcare; the percentage of ordinary amenities that can be accessed with the aid of taking

walks or cycling; pedestrian accessibility and additionally the size of urban blocks across the station.

- The market capability value refers back to the unrealized market value of station regions. It is measured by looking at the main variables that may have an effect on the call for for land (modern and destiny range of jobs inside the place of the station, range of jobs reachable through transit inside half-hour, present day and destiny housing densities) in addition to the supply (amount of developable land, feasible modifications in zoning policy, market vibrancy, and so on.).

Steps Taken for Transit-Oriented Development (TOD) in India

- **National TOD Policy (2017):** Issued by means of the Ministry of Housing and Urban Affairs, this policy presents recommendations for enforcing TOD throughout Indian cities.
- **Smart Cities Mission:** Emphasizes the combination of land use and shipping planning in selected cities to promote TOD standards.
- **Delhi TOD Policy:** Focuses on growing excessive-density, mixed-use areas around metro stations, encouraging walkability and reducing vehicle dependency.

Challenges and Way Forward

- **Funding and Financing:** Securing good enough value range for infrastructure development remains a mission.
- **Coordination Among Agencies:** Effective collaboration between various value
- **Public Awareness:** Raising awareness about the benefits of TOD among citizens and inspiring their participation in the making plans method.

Source: ***The Indian Express***

Mains PYQ

1. ***The frequency of urban floods due to high intensity rainfall is increasing over the years. Discussing the reasons for urban floods, highlight the mechanisms for preparedness to reduce the risk during such events. (2016)***

- Recently the government proposed a transit-oriented development plan for 14 large cities with a population of over 30 lakh.
- It is a planning and layout approach aimed toward developing sustainable urban environments. It specializes in compact, mixed-use groups targeted round top notch public transportation systems.
- TOD specializes in creation of high density blended land use development within the sector of transit stations.

[2.11] 14th BRICS Trade Ministers' Meeting

Syllabus - International Relation [GS Paper-2]

Context

The Commerce Secretary of India has attended the **14th BRICS Trade Ministers' Meeting** held under the BRICS Presidency of the Russian Federation.

Recent Trade Ministers' Meeting Focus Areas

- **WTO Development Aspect:** The Commerce Secretary emphasized the want to strengthen the multilateral buying and promoting gadget with the World Trade Organization (WTO) at its center, along with addressing long-pending issues associated with development and special and differential treatment.
- **Global Value Chains (GVCs):** Effective functioning of joint fee chains was mentioned, recognizing their essential function in international change.
- **MSMEs and Digitalisation:** Interaction among Micro, Small, and Medium Enterprises (MSMEs) was highlighted, along with India's fulfillment story in digitalization and e-trade.
- **Special Economic Zones (SEZs):** Cooperation among SEZs changed into deemed relevant for fostering financial growth.

Multilateralism and Urgent Reforms

- Permanent Solution to Public Stock Holding: Addressing meals security concerns.
- **Two-Tier Dispute settlement System:** Enhancing the effectiveness of dispute decisions.
- **WTO Reform:** Making the organisation greater responsive to the wishes of emerging economies.
- **'30 for 30' Initiative:** Proposing at least 30 operational upgrades to the WTO by its thirtieth anniversary in 2025.
- **Resilient Supply Chains:** Decentralisation and diversification have been endorsed to enhance supply chain resilience.
- **Paperless Trade:** The Commerce Secretary emphasised digitalization of trade documents, including the Bill of Lading.
- **Affordable Emerging Technologies:** Collaboration for green transition and weather resilience became highlighted.
- **Climate-Related Measures and MSMEs:** Concerns have been raised about climate-related unilateral measures impacting change.
    - Such measures have been visible as conflicting with Multilateral Environmental settlements and ignoring the principle of **Common But Differentiated Responsibilities (CBDR)**.
    - The significance of MSMEs in global value chains was reiterated.

About BRICS

- It is an acronym that refers to a group of five major developing national economies: **Brazil, Russia, India, China, and South Africa.**
- It commenced after the meeting of the Leaders of Russia, India and China in St. Petersburg on the sideline of the **G8 Outreach Summit in 2006**, as a formal grouping, and was formalised throughout the first meeting of BRIC Foreign Ministers on the sideline of UNGA in New York in 2006.
- Initially, the grouping became termed BRIC as South Africa was inducted in 2010 and from there on it's been referred to as BRICS.
- The governments of the BRICS states have met annually at formal summits on the grounds that 2009.
- Over a period of time, BRICS countries have come together to plan on important issues under the three pillars of political and security, economic and financial and cultural and people-to-people exchanges.
- It collectively brings together five of the most important developing countries of the sector, representing around 41% of the global population, around 24% of the global GDP and around 16% of world trade.

Importance BRICS

- **Economic Cooperation:** BRICS allows financial collaboration through projects together with the New Development Bank (NDB), geared toward investment infrastructure initiatives in member countries.
    - Economic collaboration within BRICS allows trade diversification, technology switch, and infrastructure development, which are essential for India's economic growth and development aspirations.
- **Global Governance Reform:** India makes use of BRICS as a platform to endorse reforms in international economic establishments just like the IMF and World Bank, aiming to increase the voice and representation of developing economies in global economic governance.
- **Cultural and Academic Exchange:** BRICS fosters cultural and educational exchanges, promoting people-to-people ties and enhancing mutual information among member countries.

Expansion of BRICS

- It was done as according to the selection followed through the 15th BRICS Summit in 2022. Argentina, Ethiopia, Egypt, Iran, Saudi Arabia, and the UAE are the six new additions to the BRICS.
- Significance of Expansion of BRICS likely to draw attention at the strengthening of the institution with the inclusion of countries from the Middle East and the Representative of Developing Countries and strengthening the Voice for Global Governance.

Conclusion

- The 14th BRICS Trade Ministers' Meeting provided a platform for communication on critical exchange-related issues, emphasising cooperation, inclusiveness, and the pursuit of just global development.
- As we retain to navigate the complexities of international trade, BRICS stays dedicated to strengthening multilateralism and fostering equitable growth.

Source: ***The PIB***

Prelims PYQ

1. Consider the following statements: (2016)

1. **New Development Bank has been set up by APEC.**
2. **The headquarters of New Development Bank is in Shanghai.**

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

Ans: (b)

- The Commerce Secretary of India has attended the **14th BRICS Trade Ministers' Meeting** held under the BRICS Presidency of the Russian Federation.
- **WTO Development Aspect:** The Commerce Secretary emphasized the want to strengthen the multilateral buying and promoting gadget with the World Trade Organization (WTO) at its center, along with addressing long-pending issues associated with development and special and differential treatment.

- **Global Value Chains (GVCs):** Effective functioning of joint fee chains was mentioned, recognizing their essential function in international change.
- **MSMEs and Digitalisation:** Interaction among Micro, Small, and Medium Enterprises (MSMEs) was highlighted, along with India's fulfillment story in digitalization and e-trade.
- **Special Economic Zones (SEZs):** Cooperation among SEZs changed into deemed relevant for fostering financial growth.

[2.12] Jharkhand MLAs Disqualified under Anti-defection Law

Syllabus - Polity and Governance [GS Paper-2]

Context

Recently the Jharkhand Assembly Speaker's Tribunal disqualified two legislators under the anti-defection law .

About

- **Background and Need:** The defections of legislators during the 60s and 70s from their parent parties created political instability in lots of States, bringing down elected governments.
    - Therefore, to ensure the steadiness of elected governments,The 52nd constitutional change delivered the 'anti-defection' law by the 10th Schedule in 1985.
- **Provisions:** It disqualifies a legislator in the event that they voluntarily surrender their party or violate the party whip on voting.
    - The law applies to each Parliament (Lok Sabha and Rajya Sabha) and state legislatures.
    - The Speaker or Chairman of the House decides on disqualification primarily based on petitions filed by other members.
- **Exceptions:** Defections are allowed if one-third of the members of a party decide to cut up and form a new party.
    - Legislators can transfer events without disqualification if their unique birthday party merges with another party.

Objectives

- **Preventing Political Instability:** By decreasing the frequency of defections, the law has helped in developing greater strong governments, taking into account smoother governance.
- **Ensuring Accountability:** It holds legislators chargeable for their commitment to the party that elected them, thereby reinforcing their responsibility in the direction of the electorate.
- **Promoting Party Discipline:** By discouraging defections, the regulation facilitates keeping internal discipline inside political parties, ensuring cohesive functioning.

Criticisms and Challenges

- **Undermining Democratic Rights:** There are worries that the law may infringe on the rights of legislators to specific their affairs of state and be a part of events of their desire.
- **Curbing Dissent:** Some argue that it stifles dissent inside events. Legislators may additionally fear expressing their views overtly due to the hazard of disqualification.
- **Party Supremacy:** The law prioritizes party discipline over personal judgment of right and wrong. Critics say this undermines the role of legislators as representatives in their parts.

- **Loopholes:** The exceptions (which include splits and mergers) were exploited. Some splits are orchestrated merely to skip disqualification.

Supreme Court Observations

- The Supreme Court clarified that the anti-defection regulation applies even supposing a faction splits from a political party and manages to cobble up a majority within the party itself.
- This method means that a set of legislators, whether in the majority or minority, can't escape the provisions of the Tenth Schedule by claiming to belong to the same party.
- The Speaker or Chairperson's choice is very last, its concern to judicial evaluation by the courts, ensuring that the technique remains truthful and only.

Conclusion and Way Forward

- The Anti-Defection Law is a critical legislative measure designed to keep the steadiness of political parties and ensure the integrity of elected representatives in India.
- It has been in large part powerful in accomplishing its dreams, ongoing reforms and cautious implementation are important to cope with its barriers and make certain it maintains to serve the democratic manner effectively.
- As India's democracy evolves, continuous evaluation and refinement of this law remain important.

Source: ***The Hindu***

Mains Practice Question

1. ***The noble purpose of the anti-defection law is to bring stability to governments. However, it is sometimes said to be against the true spirit of democracy. Discuss. (150 Words)***

- Recently the Jharkhand Assembly Speaker's Tribunal disqualified two legislators under the anti-defection law.
- **Background and Need:** The defections of legislators during the 60s and 70s from their parent parties created political instability in lots of States, bringing down elected governments.
    - Therefore, to ensure the steadiness of elected governments,The 52nd constitutional change delivered the 'anti-defection' law by the 10th Schedule in 1985.
- **Provisions:** It disqualifies a legislator in the event that they voluntarily surrender their party or violate the party whip on voting.
    - The law applies to each Parliament (Lok Sabha and Rajya Sabha) and state legislatures.
    - The Speaker or Chairman of the House decides on disqualification primarily based on petitions filed by other members.
- **Exceptions:** Defections are allowed if one-third of the members of a party decide to cut up and form a new party.
    - Legislators can transfer events without disqualification if their unique birthday party merges with another party.

[2.13] PCA Framework for Urban Cooperative Banks

Syllabus - Economy [GS Paper-3]

Context

The Reserve Bank of India (RBI) recently issued a Prompt Corrective Action (PCA) framework to take steps for improvement of weak Urban Cooperative Banks (UCBs).

About

- The objective of the PCA Framework is to allow supervisory intervention at appropriate time and require the supervised entity to initiate and put into effect remedial measures in a timely manner, for you to restore its economic health.
- Capital, asset quality and profitability can be the key regions for tracking inside the revised PCA Framework.
- The PCA framework will update the present supervisory motion framework (SAF) which was established as an early intervention device to carry enhancements in UCBs.
- The new framework can be applicable to UCBs with deposits above Rs 100 crore.

What are Cooperative Banks?

- Cooperative Banks seek advice from those economic establishments beneath the Banking System in India that function on the principles of cooperation and mutual gain for their members.
- They belong to their individuals who are both the proprietors and clients of the bank.
- They perform on the precept of "one person, one vote" in selection-making. Along with lending, those banks additionally are given deposits.

Regulation of Cooperative Banks in India

- These banks in India, broadly, come below the dual control of:
    - **Reserve Bank of India:** Under the Banking Regulation Act, 1949, and the Banking Laws (Application to Co-operative Societies) Act, 1965, the RBI is answerable for regulating banking components of these banks, such as capital adequacy, chance control, and lending norms.
    - **Registrar of Co-operative Societies (RCS) of respective State or Central Government:** They are liable for regulation of management-related components of these banks, such as incorporation, registration, management, audit, supersession of board of administrators, and liquidation.

Structure of Cooperative Banks in India

- These banks, beneath the Banking System in India, are primarily categorized into – Rural Cooperative Banks (RCBS), and Urban Cooperative Banks (UCBS).
- **Urban Cooperative Banks (UCBs)**
    - They function in city and semi-city areas and especially lend to small borrowers and companies.
    - Based on their law regime, they're labeled into two kinds – Scheduled Banks and Non-Scheduled Banks.
    - Urban Co-operative Banks were categorised into four stages.
        - The tier 1 includes UCBs with deposits as much as Rs 100 crore, tier 2 are those with deposits above Rs 100 crore and much less than Rs 1,000 crore.

- The tier 3 will encompass UCBs with deposits above Rs 1,000 crore and much less than Rs 10,000 crore and tier 4 would have UCBs with deposits above Rs 10,000 crore.

Issues in Urban Cooperative Banks (UCBs)

- Cooperative Banks are facing financial vulnerabilities along with low capitalization, high levels of NPAs, and low Capital Adequacy Ratio (CAR).
- Large quantities of large Cooperative banks have failed because of economic scams. Ex-Punjab and Maharashtra Cooperative (PMC) bank, Guru Raghavendra Cooperative Bank and Maharashtra State Cooperative (MSC) Bank have failed because of monetary frauds.

Source: ***The Hindu***

Prelims PYQ

1. With reference to 'Urban Cooperative Banks' in India, consider the following statements:

1. **They are supervised and regulated by local boards set up by the State Governments.**
2. **They can issue equity shares and preference shares.**
3. **They were brought under the purview of the Banking Regulation Act, 1949 through an Amendment in 1966.**

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

Ans: (b)

- The Reserve Bank of India (RBI) recently issued a Prompt Corrective Action (PCA) framework to take steps for improvement of weak Urban Cooperative Banks (UCBs).
- The objective of the PCA Framework is to allow supervisory intervention at appropriate time and require the supervised entity to initiate and put into effect remedial measures in a timely manner, for you to restore its economic health.
- Capital, asset quality and profitability can be the key regions for tracking inside the revised PCA Framework.
- The PCA framework will update the present supervisory motion framework (SAF) which was established as an early intervention device to carry enhancements in UCBs.
- The new framework can be applicable to UCBs with deposits above Rs 100 crore.

[2.14] Impact of Oil Spills on Environment

Syllabus - Disaster Management [GS Paper-3]

Context

The Typhoon Gaemi has wreaked havoc across Taiwan, the Philippines and parts of southeastern China, resultant heavy rains led to the sinking of the oil tanker laden with 1.4 million litres of oil, in Manila Bay.

About

- Oil spills arise while crude oil or delicate petroleum products are launched into the environment, typically because of injuries at some point of transportation, offshore drilling, or tanker mishaps. These spills may have both instantaneous and lengthy-term effects for ecosystems and human communities.
- **Spilled materials:** It may be subtle petroleum products, which include gasoline and diesel fuel, in addition to their by-products — heavier fuels used by massive ships including bunker fuel or oily refuse of any type.
    - Gasoline, as an instance, is worse than crude oil as it's lighter and more toxic.

Types of Oil Spills

- **Major Incidents:** These are more extreme and regularly result from pipeline breaks, tanker accidents (sinking or running aground), or drilling mishaps. The results of important spills can be felt for decades.
- **Minor Spills:** These arise at some stage in routine operations, which includes when oil spills from a ship in the course of refuelling.

Related Environmental Impacts

- **Marine Life and Habitats:**
    - **Physical Effects:** Oil coats the surface of the water, lowering sunlight penetration. This disrupts photosynthesis and influences marine flora like algae and seagrass.
    - **Chemical Effects:** Toxic components in oil damage fish, shellfish, and other aquatic organisms. These toxins can accumulate inside the food chain.
    - **Birds and Mammals:** Oil can kill surface-living animals and birds through poisoning or suffocation. It also impacts buoyancy and natural waterproofing, making animals susceptible.
- **Coastal and Marine Environments:**
    - **Recovery Time:** Coastal and marine ecosystems can take numerous decades to recover from oil pollutants. Even after visible signs disappear, lingering consequences persist.
    - **Mangroves and Wetlands:** These sensitive habitats suffer from oil contamination, affecting their capability to help biodiversity.
- **Economic Impact:**
    - **Fisheries:** Oil spills disrupt fishing activities, leading to economic losses for coastal communities.
    - **Tourism:** Contaminated seashores and water discourage tourism, impacting regional economies.

Measures to Address Oil Spills

- **Prevention:** Strict guidelines for oil tankers, pipelines, and offshore platforms; Improved protection protocols in the course of oil transport and extraction.
- **Response and Cleanup:** Rapid containment and restoration of spilled oil; Use of booms, skimmers, and dispersants; Natural processes (such as microbial degradation) play a function in breaking down oil.

Control Measures for Oil Spills

- **Bioremediation:** It refers to using specific microorganisms to eliminate any poisonous or dangerous materials
    - The Energy and Resource Institute (TERI) has developed Oil Zapper Bacteria that may degrade the oil fast.

- **Oil Booms:** They are brief floating boundaries used to incorporate marine spills, shield the environment, and help in recovery.
- **Using Dispersants:** Dispersal retailers are chemical substances which are sprayed upon the spill with the help of aircraft and boats, which are a useful resource for the natural breakdown of oil components.

Global Efforts

- **International Convention for the Prevention of Pollution from Ships (MARPOL):** It was rolled out through the International Maritime Organisation (IMO) in 1973 and acknowledged the need for worldwide coherent efforts for curtailing oil spill.
- **International Convention on Oil Pollution Preparedness, Response and Cooperation 1990:** It is the international system that gives a framework designed to facilitate global cooperation and mutual assistance in getting ready for and responding to fundamental oil pollutants incidents.
- **UN Environment Programme (UNEP):** It specializes in elevating recognition, ability-building, and promoting quality practices to prevent and respond to oil spills.
- **Organisation for Economic Co-operation and Development (OECD):** It tracks recovery measures with environmental effect. Green recovery plans can decorate energy safety and environmental outcomes.
- **International Energy Agency (IEA):** It emphasises transitioning to cleanser electricity assets to lessen oil dependency and mitigate environmental risks.

Indian Efforts for managing Oil Spill

- **National Oil Spill Disaster Contingency Plan (NOS-DCP):** It was promulgated in 1996 and revised in 2015. It specializes in powerful reporting of spillage, set off response to prevent, manipulate and fight oil pollution, and good enough safety to Public Health and Welfare along Marine Environment, in conjunction with using Science and Technology for stopping and handling oil spills and pollution and residuals.
- **Merchant Shipping Act, 1958:** The Act, describes the energy to offer a notice to the proprietor, while the relevant government is happy the ship isn't always as according to the prescribed regulations. After observation, if the character fails to conform, the authorities can convict the individual of an offence.
- **Indian Coast Guard:** It features as the Central Coordinating Authority for response to Oil spills in Indian waters.
- **National Level Pollution Response Exercise (NATPOLREX)** was carried out via the Indian Coast Guard off Vadinar, Gujarat recently.

Conclusion

- Oil spills continue to be a vital environmental challenge. By implementing preventive measures, improving reaction abilities, and promoting sustainable energy alternatives, it could be feasible to minimize their impact on our planet.

Source: ***The Indian Express***

Mains Practice Question

1. ***What is oil spill pollution? What are its impacts on the marine ecosystem? In what way is oil pollution particularly harmful for a country like India?***

- The Typhoon Gaemi has wreaked havoc across Taiwan, the Philippines and parts of southeastern China, resultant heavy rains led to the sinking of the oil tanker laden with 1.4 million litres of oil, in Manila Bay.
- Oil spills arise while crude oil or delicate petroleum products are launched into the environment, typically because of injuries at some point of transportation, offshore drilling, or tanker mishaps. These spills may have both instantaneous and lengthy-term effects for ecosystems and human communities.
- **Spilled materials:** It may be subtle petroleum products, which include gasoline and diesel fuel, in addition to their by-products — heavier fuels used by massive ships including bunker fuel or oily refuse of any type.
    - Gasoline, as an instance, is worse than crude oil as it's lighter and more toxic.

[2.15] Tea Plantation Industry in India

Syllabus - Agriculture [GS Paper-3]

Context

The financial stress in the tea plantation Industry is affecting the investors and the plantation workers who are dependent on this industry for generations.

About

- India is the 2nd biggest tea producer and biggest black tea manufacturer.
- Indian teas are exported to numerous destinations like Iran, Iraq, Syria, Saudi Arabia, Russia and so forth. It is the 4th largest tea exporter in the World.
- The Indian tea Industry is using 1.16 million people directly and an identical range of people are related to it not directly.
- Assam grows about 55% of the teas produced in India. India's tea production has multiplied by 39% in 2022 from 2008.

Challenges confronted by Indian Tea Industry

- **Increased enter price:** The tea expenses expanded at a compound annual boom rate (CAGR) of around 4% over the last decade, however the cost of inputs like gas and coal grew at a CAGR of nine-15%.
- **Economic Pressures:** Rising production costs, consisting of wages, fuel, and fertilizer costs, are squeezing income margins.
- **Demand-supply gap:** The rise in small tea growers and so forth manufacturing, isn't in proportion with the domestic consumption and exports, leading to surplus manufacturing.
- **Weak exports:** The Iran marketplace constitutes almost 20% of total tea exports from India and there may be decline of exports to Iran because of the payment issues causing economic stress to the exporters
    - A decline in usual export demand due to surplus within the international markets, brought about an International cost crash.
- **Export Dependence:** India's tea enterprise relies closely on exports, making it vulnerable to fluctuations in international demand and trade regulations.
- **Nepal's gardens:** Unhampered and clean influx of substandard tea from neighboring nations, specifically Nepal" is jeopardizing the tea industry of India.

- **Sustainability Issues:** There is growing stress to undertake sustainable practices in tea manufacturing. This includes addressing issues together with soil degradation, water usage, and the environmental impact of pesticide use.
- **Other factors:** Stagnant charges, awareness of marketplace electricity among a few key gamers, and a decline within the supply of teas to make the beverage more lower priced etc. Have been recognized as fundamental factors.

Tea Board of India

- The Tea Board of India is functioning as a statutory body of the Central Government beneath the Ministry of Commerce.
- It was set up by means of the enactment of the Tea Act in 1953, to promote the cultivation, processing, and domestic trade as well as export of tea from India.
- Headquarters: Kolkata, West Bengal

Steps taken by Indian government

- The Tea Board of India had devised a scheme of "Assistance of education stipend to the wards of Small Tea Growers" to improve their livelihood and education needs.
- The Government of India through the Tea Board had helped in the formation of 352 Self Help Group (SHG), 440 Farmer Producer Organisation (FPO) and 17 Farmer Producer Companies (FPCs).
- A mobile app "Chai Sahyog", is being evolved to assist Small Tea Growers in terms of better cost recognition and statistics.

Way Ahead

- The Government needs to interfere by offering better export infrastructure, completely defraying State obligations by growing the RoDTEP (Remission of Duties or Taxes on Export Products) rate and reducing the hobby cost on borrowings to make Indian tea producers/exporters extra competitive within the international marketplace.
- Steps are needed to adjust tea waste sold within the domestic marketplace at lower costs, restricting import of bad-quality teas, and merchandising of tea emphasizing its health advantages.

Source: ***The Hindu***

Mains PYQ

1. ***Whereas the British planters had developed tea gardens all along the Shivaliks and Lesser Himalayas from Assam to Himachal Pradesh, in effect they did not succeed beyond the Darjeeling area. Explain. (2014)***

- The financial stress in the tea plantation Industry is affecting the investors and the plantation workers who are dependent on this industry for generations.
- India is the 2nd biggest tea producer and biggest black tea manufacturer.
- Indian teas are exported to numerous destinations like Iran, Iraq, Syria, Saudi Arabia, Russia and so forth. It is the 4th largest tea exporter in the World.
- The Indian tea Industry is using 1.16 million people directly and an identical range of people are related to it not directly.
- Assam grows about 55% of the teas produced in India. India's tea production has multiplied by 39% in 2022 from 2008.

[2.16] Centre may Complain Against ILO Employment Report

Syllabus : Governance [GS Paper-2]

Context

The Indian government is considering filing a complaint against the International Labour Organization (ILO) over its recent India Employment Report 2024, which was released in March this year. The report, prepared by the ILO and the Institute of Human Development (IHD), has raised concerns within the Union Labour Ministry regarding the data and methodology used to assess the employment scenario in India.

Discrepancies in Data and Methodology

- A senior official from the Union Labour Ministry has claimed that the "model" that has been adopted by the ILO so as to judge the employment picture in India is not appropriate and that India can provide its own separate score of the situation. The official identified a disparity between the statistics employed by the ILO and the statistics being used in that country.
- The report said that India's youth account for almost 83% of the unemployed workforce and that the share of youngsters with secondary or higher education in the total unemployed has almost doubled from 35.2% in 2000 to 65.7% in 2022. However, the government has expressed doubts over the data provided by private agencies such as the Centre for Monitoring Indian Economy (CMIE).

Government's Stance and Initiatives

- The Centre has been maintaining that PLFS has better data on employment situation in India Sweeping statements like these suggest that. Minister of State for Labour Shobha Karandlaje replying to the Lok sabha on July 29 said that unemployment rate of youths in the country is declining. She added that "employment generation accompanied by a rise in employability is the objective of the Government", and censured that "steps have been taken to generate employment in India".
- It was recently that the Ministry of Labour and Employment resolved to prepare a complete scenario of employment and unemployment data. During a meeting with around 20 secretaries from different Ministries regarding proposed mechanism on employment data, Labour Minister Mansukh Mandaviya highlighted to make cross-linkages of different employment data base/information base and assimilation/integration of the same to build comprehensive structure/institution for mimicking the employment generation picture in the country.

ILO's India Employment Report 2024

- This paper uses official employment statistics to outline the latest trends in the Indian labour market, synthesised from the ILO's India Employment Report 2024. The presented report reveals some positive changes in some indicators while introducing the remaining issues, primarily, those related to youth unemployment, education, and skills.
- The report is made in memory of Ajit K. Ghose (1947–2023), who contributed actively to the themes of labour markets and employment in the course of his long career in ILO and IHD. The report is marked by contributions from a number of specialists: Ravi Srivastava, Alakh N. Sharma, Balwant Singh Mehta, G. C. Manna, Tanuka Endow, and Siddharth Dhote.

Implications and Way Forward

- It is in this light that the government's decision to lodge a complaint against the ILO'S report stresses on the measures required for gathering credible data on employment situation in the Indian economy. Thus, contradictions between the results of the government and ILO reports

point to the necessity of the integrated and unique data system that comprehensively characterizedIndian Labour Market.

- Present government's endeavors, like establishment of a broad structural model for employment and unemployment and focusing on employment creation and skill development for such an objective, are encouraging. Nevertheless, such actions should be supported by solid empirical data and accompanied by cooperation with such global institutions as the ILO.

Conclusion:

Therefore, lodging a complaint to the ILO on the India Employment Report 2024 is one of the Centre's efforts of providing the right picture in relation to employment in the country. These differences in data and methods are quite expected, nevertheless, such problems must be discussed and solved with intention to enhance the living standards of Indian workers, especially the young people.

Source: The Hindu

UPSC Mains Practice Question

Q. Discuss the impact of the International Labour Organization's (ILO) reports on India's employment policies. How can India balance the need for economic growth with the creation of sustainable and inclusive employment opportunities?

[2.17] India's Decision to Block Chinese

Syllabus : International Relations [GS Paper-2]

Context

India's decision to block Chinese nationals, particularly technicians, has sparked significant debate regarding its implications for the country's economy and its manufacturing sector. This approach, largely driven by national security concerns, has raised questions about the balance between safeguarding sovereignty and fostering economic growth.

Declining Visa Issuance and Its Consequences

- The number of visas issued to Chinese nationals has plummeted dramatically from approximately 200,000 in 2019 to just 2,000 in 2024.
- This decline is primarily attributed to geopolitical tensions following border clashes in 2020, which prompted Indian officials to accuse Chinese nationals of violating visa conditions and engaging in money laundering to evade Indian tax laws.
- The current situation has created a bottleneck in various sectors, particularly manufacturing, leading to significant production losses estimated at around $15 billion over the past few years.

The Skill Gap in Indian Manufacturing

- Indian businesses are facing a substantial skill gap that hampers productivity and the effective use of advanced machinery.
- Many Indian companies have acquired sophisticated machines from China but struggle to operate them efficiently without the expertise of Chinese technicians.
- Leaders in various industry sectors have repeatedly emphasized the urgent need for skilled Chinese professionals, whose productivity levels can significantly enhance output.

- For instance, Chinese technicians can reportedly help produce 150 items with the same resources that Indian workers use to produce only 100.

Government Response and Industry Concerns

- Indian authorities have recently pointed out that they are willing to take measures that would grant quicker China visas for Chinese technicians due to the current scarcity of skilled workforce. However, the available fact provokes the identification of realistic outcomes, namely – limited quotas face intense scrutiny resulting in increased time and uncertainty.
- One cabinet minister stated that the visas would only be processed if it would be ascertained that the travelling conditions would not be breached, thus giving credence to the argument of protractors that such stringent measures could actually kill the initiative.
- It is quite paradoxical to say the least while the government is chasing the dream of the 'Atma Nirbhar Bharat' or the Self-Reliant India, the country is becoming more and more dependent on the foreign investment including Chinese expertise. This conflict captures the dilemma that India had in protecting the country's sovereignty while at the same time transforming the economy through the acquisition of knowledge and skills from the foreigners.

Educational Challenges in India

- The root cause for the above concern, which is the overdependence on the foreign technicians in India, is the educational system. India has greatly advanced in the achievement of universal primary education and supplied many school infrastructures in the country but the problem of quality education has been a serious issue.
- Some data even suggest that as many as 85 percent of Chinese school leavers have basic competencies to enable them compete in the global market as opposed to 15 percent of Indians. This contrast shows that it is high time that the educational sector be privy to changes in order to render workforce for new era industries.

The Need for a Comprehensive Strategy

To address the challenges posed by the blocking of Chinese technicians, India must adopt a comprehensive strategy that balances national security with economic needs. This includes:

- **Reforming the Visa Process:** Reducing the bottlenecks of the visa process that applied to most technicians from the People's Republic of China to enable them work in India.
- **Enhancing Domestic Education:** Supporting the educational changes to make better skillful employees and ensuring that the working force of India is capable of utilizing technological enhancement.
- **Fostering International Collaboration:** Developing collaborations with international organizations in order to bring improvements in the stock of knowledge and human skill mix present in the country.
- **Addressing National Security Concerns:** The exposure of measures used in determining the risks of foreign expertise while at the same time, avoiding the compromising of growth through too much security.

Conclusion

India's decision to block Chinese technicians reflects broader geopolitical tensions and national security concerns. However, this approach poses significant risks to the country's economic growth and manufacturing capabilities. By acknowledging the skill gaps within its workforce and embracing foreign expertise, India can enhance its productivity and competitiveness in the global market. Ultimately, a balanced approach that prioritizes both security and economic development is essential for India's future prosperity.

Source: The Hindu

UPSC Mains Practice Question

Q. Analyze the challenges faced by India in bridging its skill gap and advancing its manufacturing sector. Suggest measures to overcome these challenges and enhance the competitiveness of Indian manufacturing in the global market.

[2.18] SC Launches Special Lok Adalat Drive

Syllabus : Governance [GS Paper-2]

Context:

The Supreme Court of India has initiated a week-long special Lok Adalat drive from July 29 to August 3, 2024. This initiative, part of the court's 75th anniversary celebrations, aims to expedite the resolution of pending cases through amicable settlements. The drive is a significant move towards enhancing access to justice and reducing the burden on the judicial system.

Purpose and Significance:

- **Enhancing Access to Justice: The primary objective of this special Lok Adalat drive is to make justice more accessible to the general public. The Supreme Court recognizes that a large number of cases remain unresolved due to various reasons, including lengthy court procedures and legal complexities. The Lok Adalat system offers a platform for parties to resolve their disputes without the need for prolonged litigation.**
- **Reducing Case Backlog: India's judicial system faces a significant backlog of cases, with millions pending in various courts. The Lok Adalat drive is a strategic effort to address this issue by encouraging settlements in suitable cases. By facilitating quicker resolutions, the Supreme Court aims to alleviate the pressure on the judicial system and ensure timely justice for all.**

Cases Covered:

The special Lok Adalat will focus on a variety of cases that are amenable to settlement. These include:

- **Matrimonial Disputes:** Issues related to divorce, child custody, and maintenance can often be resolved amicably through mediation.
- **Property Disputes:** Disagreements over property ownership, boundaries, and inheritance can be settled without resorting to lengthy litigation.
- **Motor Accident Claims:** Claims arising from vehicular accidents, which often involve compensation disputes, can be efficiently addressed in a Lok Adalat.
- **Land Acquisition:** Disputes related to land acquisition, especially those involving compensation amounts, can benefit from the Lok Adalat process.
- **Compensation Claims:** Various types of compensation claims, including those related to consumer disputes, can be resolved through mutual agreement.
- **Service and Labor Disputes:** Issues between employers and employees, including wrongful termination and wage disputes, are suitable for resolution in a Lok Adalat setting.

Lok Adalat Process:

Structure and Functioning: During this special drive, the Supreme Court will operate seven benches that will function as Lok Adalats. Each bench will consist of a combination of judges and legal experts, including:

- **Chief Justice D.Y. Chandrachud:** Leading the initiative, he emphasizes the importance of alternative dispute resolution mechanisms.
- **Justices J.B. Pardiwala and Manoj Misra:** These judges will assist in hearing cases and facilitating discussions between parties.
- **Legal Representatives:** Notable legal figures, including Supreme Court Bar Association president Kapil Sibal and Advocate-on-Record Association president Vipin Nair, will also be involved.

Hearing Schedule: The Lok Adalats will commence hearings daily at 2 p.m., following the conclusion of the regular court proceedings. This schedule allows judges to dedicate time specifically to the Lok Adalat process, ensuring that cases receive focused attention.

Benefits and Outcomes:

- **Amicable Settlement: One of the key advantages of the Lok Adalat system is its emphasis on amicable settlements. Unlike traditional court proceedings, which can often be adversarial, Lok Adalats encourage collaboration and negotiation between parties. This approach fosters a more harmonious resolution to disputes, which can be particularly beneficial in sensitive cases like matrimonial disputes.**
- **Speedy Disposal of Cases: The Lok Adalat process is designed to be efficient, allowing for quick resolutions. By focusing on cases that are suitable for settlement, the drive aims to significantly reduce the time taken to resolve disputes. This efficiency is crucial in a legal system burdened by delays and backlogs.**
- **Cost-Effective Resolution: Litigation can be expensive, with costs accumulating over time due to prolonged court proceedings. The Lok Adalat offers a cost-effective alternative, as parties can resolve their disputes without incurring significant legal fees. This accessibility is especially important for lower-income individuals who may struggle to afford traditional legal representation.**
- **Promoting Alternative Dispute Resolution: The special Lok Adalat drive is part of a broader push to promote alternative dispute resolution (ADR) mechanisms in India. By showcasing the effectiveness of Lok Adalats, the Supreme Court aims to encourage more parties to consider mediation and arbitration as viable options for resolving disputes.**

Conclusion:

The Supreme Court's special Lok Adalat drive is a notable initiative aimed at improving justice delivery in India by facilitating amicable settlements and expediting dispute resolutions. Commemorating the Court's 75th anniversary, the drive addresses case backlogs and enhances the judicial system's efficiency. It highlights the Supreme Court's commitment to innovation and a more responsive legal framework, emphasizing the importance of citizen and legal community participation. The initiative represents a significant move towards a more equitable and efficient justice system, using alternative dispute resolution methods to ensure timely and cost-effective justice.

Source: The Hindu

UPSC Mains Practice Question

Q. What is the primary purpose of the Supreme Court's week-long special Lok Adalat drive from July 29 to August 3, 2024?

A. To celebrate the 75th anniversary of the Supreme Court

B. To reduce the backlog of pending cases

C. To provide free legal services to the weaker sections of society

D. To amicably settle long-pending disputes

Answer: D

Explanation:

The Supreme Court has launched this special Lok Adalat drive as part of its 75th anniversary celebrations with the aim of facilitating amicable settlements of suitable pending cases and expediting the resolution of various disputes. The drive focuses on cases that are amenable to settlement, such as matrimonial disputes, property disputes, motor accident claims, land acquisition, compensation, and service and labor disputes.

[2.19] Encroaching Trees Threaten India's Open Ecosystems

Syllabus: Environment & Ecology [GS Paper-3]

Context

India's open ecosystems are increasingly threatened by a phenomenon known as woody encroachment, where trees invade grasslands and savannahs, disrupting the delicate balance of these habitats. This issue has garnered attention from scientists and conservationists alike, as it poses significant risks to biodiversity and ecosystem health.

Understanding Woody Encroachment

Woody encroachment refers to the gradual invasion of tree species into open ecosystems that are traditionally dominated by grasses. This process can lead to the transformation of grasslands into wooded areas, which alters the habitat and can have profound impacts on the species that depend on these ecosystems.

Causes of Woody Encroachment

Several factors contribute to woody encroachment in India:

- **Climate Change:** Changes in temperature and precipitation patterns can favor the growth of trees over grasses, leading to increased encroachment.
- **Human Activities:** Agricultural expansion, urban development, and overgrazing by livestock can disturb the natural balance, allowing trees to thrive where they previously could not.
- **Fire Suppression:** Historically, fire played a crucial role in maintaining open ecosystems by preventing tree growth. However, fire suppression practices have allowed trees to establish themselves in areas where they would typically be kept in check.

Consequences for Ecosystem Services

The transformation of open ecosystems into wooded areas can have far-reaching consequences for ecosystem services. Grasslands provide numerous benefits, including:

- **Carbon Sequestration:** Grasslands communities also play a role of trapping carbon dioxide from the atmosphere. Their conversion to wooded areas may change their ability to absorb carbon dioxide Compilers of the data realized that the ccats were not equal agents with regard to their capacity to convert carbon dioxide into other forms.
- **Water Regulation:** Therefore, grassland ecosystems are significant in water control and the recharging of groundwater sources. Intrusion of trees in these areas alters water dynamics in the areas by increasing runoff and hence degrading water quality.
- **Soil Health:** The change in vegetation cover from grassland to woods may affect the local soil and nutrient availability because grasslands and woods exhibit different characteristics with regard to soil texture and structure.

Conservation Challenges

Conserving India's open ecosystems in the face of woody encroachment presents several challenges:

- **Fragmentation of Habitats: Most grassland regions are thus discontinuous due to human interventions hence species movement and compensation for new environing conditions are constrained. This fragmentation can increase the effects of woody encroachment by dividing the population and decreasing gene pool.**
- **Protected Areas: It shows that even in the PA, the issues of woody encroachment are very alarming. Cultivation techniques that do not factor in the dynamics of woody encroachment may therefore provide little or no guarantees to the species' sustainability. There is a need to develop the right management practices that shall help in sustaining the ecosystems.**

Strategies for Mitigation

To combat the threat of woody encroachment, several strategies can be implemented:

- **Active Management: Active management of grassland ecosystems is essential. This includes controlled burns to mimic natural fire regimes, which can help maintain open habitats and prevent tree invasion.**
- **Community Involvement: It is also noted that involving local communities in management initiatives will improve the efficiency of the measures. In this aspect, the possibility of having communities take the lead on specific areas of land use helps create awareness about good sustainable practices.**
- **Research and Monitoring: Further research and continuous assessment of woody encroachment is vital in order to identify the changes that are happening and the effects on the biological diversity. Thus, knowing these trends, it is possible to create specific effective measures to prevent the negative impact of the phenomenon.**
- **Policy Frameworks: The measures that must be taken include policies that are shielding open ecosystems and putting into practice efficient policies that address the issue. This involves incorporating environmental aspects into the decisions of the usage of land and practicing optimum agriculture.**

Conclusion

The trees which are growing in the open ecosystems of the country are being threatened in a rather different style due to a natural process associated with man-made factors. Therefore, woody encroachment does not only have negative impacts on species' distribution; it poses a future risk to other extremely important services that ecosystems offer. Overcoming this problem will need a complex intervention program that involves practice, people participation, research and strong guidelines. Therefore, if India offers its effort in protecting these critical biomes, then the country can set itself up to promote sustainability in both its environment and population.

Source: The Hindu

UPSC Mains Practice Question

Q. Discuss the impact of tree encroachment on open ecosystems in India and suggest measures to balance afforestation efforts with the conservation of these ecosystems.

[2.20] Ukraine War Strengthens India-Europe Relations

Syllabus: International Relations [GS Paper-2]

Context

The ongoing war in Ukraine has significantly reshaped the geopolitical landscape, creating new dynamics between India and Europe. As both regions navigate the complexities of this conflict, their mutual importance is becoming increasingly evident. This relationship is driven by economic, security, and diplomatic considerations that necessitate a reevaluation of their interactions.

The Geopolitical Context

- **Historical Relations: India and Europe have historical relations these relations are mainly in the forms of business collaboration and intercultural interactions. However, due to the developments that took place in the world arena, such as the Russian aggression in Ukraine, both regions have had to change their strategic orientations. Traditionally, India has had a policy of no permanent friends and foes and has always kept good relations with other top nations such as Russia and the west. As for Europe, for a long time, it has been struggling to answer the question related to its security regime due to Russian aggression.**
- **The Ukraine War's Impact: The conflict in Ukraine affects the economic relations between states due to disrupted supplies, and their consequences are reflected in both India and Europe. The conflict has made energy prices and food issues soar, making both regions look for the options and strengthen their monetization relationship. For instance, India has resorted to cheap Russian oil to tackle inflation while Europe on the other side is grappling with how to wean itself from Russian energy sources.**

Economic Interdependence

- **Energy Security: Energy security the key robust area of interest for both India and Europe. Presently, the war has made energy become scarce, with the European nations experiencing high costs of energy products and therefore began to look for other sources of energy. India which is a large importer of energy has been placed in somewhat of a holding pattern. India can lock in its energy requirement by buying cheap Russian oil while Europe is trying to wean itself off Russian crude. This interdependence is a clear indication that there can be synergy in one of man's most valuable resources, energy, diversification strategies.**
- **Trade Relations: This is quite clear when you consider the fact that there is much more than energy relations in the India Europe trade relations. The European Union (EU) thus remains one of India's biggest trading partners and the war has presented chances of deeper trade relations. Import/export of technology, pharmaceutical and agriculturally produced products should improve between the two regions. While Europe plans to diversify its supply chain and decrease the dependence on hostile countries, it finds a solution in India.**

Security Considerations

- **Strategic Partnerships: Enduring security partnerships have become apparent due to the situation in Ukraine. Regarding India, the war increases concern over Beijing's growing influence and its partnership with Moscow. While warming up the relations with Moscow, Beijing triggers a security rethink for India. The interaction with Europe can help India improve its defense front and also can act as a counter to China.**
- **European Security Framework: Whereas, Europe is changing the outlook to security architecture in light of the Ukraine crisis. It has shown that Europe is lacking in defense and this consequently sparked debates about the need for increasing the European Union member's defense spending and cooperation. In this regard, India can contribute effectively for Europe securing initiatives especially in the asia-Indo pacific region where both Europe and India have common vested interests.**

Diplomatic Engagement

- **India's Neutral Stance: In this context Indian stand regarding Ukraine war can be described as tactfully neutral. However, India has not joined international condemnation of Russia by adorning itself to the cause of peace and stability on several occasions. This way India is able to retain its unique position of strategic independence while being in close relations with both Russia and the West. Thus, India's neutrality could act as a link between the conflicting European parties due to India's own conflicting stance on the issue.**
- **Opportunities for Collaboration: The Ukraine war presents an opportunity for India and Europe to collaborate on peace initiatives. Both regions share a vested interest in promoting stability and resolving conflicts through diplomatic means. India's historical ties with Russia and its position as a non-Western power can facilitate dialogue between conflicting parties. By working together, India and Europe can contribute to a more stable geopolitical environment.**

Challenges Ahead

- **Balancing Relationships: Despite the potential for collaboration, challenges remain. India's historical ties with Russia complicate its relationship with Europe. While India seeks to reduce its dependence on Russia, it must navigate the delicate balance of maintaining its strategic partnership with Moscow. European nations, on the other hand, are wary of India's neutrality and its continued engagement with Russia.**
- **Internal Divisions in Europe: Europe is facing internal divisions regarding its approach to the Ukraine conflict. Some nations advocate for a more conciliatory stance towards Russia, while others push for a tougher response. These divisions can hinder the formation of a cohesive European strategy, impacting the potential for collaboration with India.**

Conclusion

The Ukraine war has become an opportune time for India and Europe to understand each other's strategic significance in comprehending the priorities for the new world order. These two regions now find themselves economically troubled and threatened with insecurity, and this makes their dependence on each other more evident. If both India and Europe expolit the history of cooperation and move past the challenges in the future, they can have better and stronger security and economic relations. It is a new nature of relations that not only serves the good of both regions but also of mankind in a world that is today more unstable.

Source: The Indian Express

UPSC Mains Practice Question

Q. Analyze the impact of the Ukraine conflict on India-Europe relations and discuss the strategic and economic opportunities that have emerged for India.

[2.21] US Becomes India's Second Largest LNG Supplier

Syllabus: International Relations [GS Paper-2]

Context

The United States has recently emerged as India's second-largest supplier of liquefied natural gas (LNG), displacing the United Arab Emirates (UAE) in 2023. This shift in the LNG landscape highlights the growing importance of the US as a global energy player and the changing dynamics of India's energy security strategy.

The Rise of US LNG Exports

The US has been steadily increasing its LNG export capacity in recent years, with the country becoming the world's top LNG exporter in 2023. This surge in exports can be attributed to the expansion of existing projects and the start of new facilities, such as the Freeport LNG terminal in Texas, which resumed operations in 2023 after a temporary shutdown.

India's Growing LNG Demand

- India's appetite for natural gas has been on the rise, driven by its efforts to diversify its energy mix and reduce its carbon footprint.
- The country aims to increase the share of natural gas in its energy consumption from the current 6.2% to 15% by 2030.
- This growing demand has made India an attractive market for LNG suppliers, with the US emerging as a key player in meeting this demand.

The Importance of Long-Term Contracts

- Long-term LNG supply contracts have played a crucial role in shaping the relationship between India and its LNG suppliers.
- In 2023, Petronet LNG, India's largest gas importer, signed a landmark deal with QatarEnergy to receive 7.5 million metric tonnes of LNG per year from 2028 to 2048.
- This agreement highlights the importance of long-term partnerships in ensuring energy security and providing stability in the LNG market.

Diversifying Supply Sources

- As India seeks to enhance its energy security, diversifying its LNG supply sources has become a priority.
- The US's emergence as a major LNG supplier offers India an opportunity to reduce its reliance on any single source and mitigate potential supply disruptions.
- By tapping into the US's growing LNG exports, India can strengthen its energy security and negotiate more favorable terms in the global LNG market.

The Geopolitical Implications

- The shifting LNG landscape also has geopolitical implications. The US's growing presence in the Indian LNG market can be seen as part of a broader strategy to strengthen its ties with India and counter China's influence in the region.
- India, on the other hand, has maintained a delicate balance in its relationships with major powers, including the US, Russia, and China.
- The country's ability to navigate these complex geopolitical waters will be crucial in shaping its energy security strategy going forward.

The Impact on Domestic Gas Producers

- The increasing reliance on imported LNG has raised concerns about the impact on India's domestic gas producers.
- As the country's gas demand grows, there is a need to strike a balance between promoting domestic production and ensuring access to affordable LNG imports.
- The government's policies will play a crucial role in supporting the growth of the domestic gas industry while also facilitating the integration of imported LNG into the country's energy mix.

The Environmental Considerations

- The shift towards natural gas as a cleaner alternative to coal has also raised questions about the environmental impact of LNG imports.
- While natural gas emits less carbon dioxide than coal during combustion, the extraction, liquefaction, and transportation of LNG can have significant environmental costs.
- As India seeks to reduce its carbon footprint, it will need to carefully consider the life-cycle emissions of LNG and explore ways to minimize its environmental impact.

The Role of Infrastructure Development

- Realizing the full potential of LNG imports requires significant investments in infrastructure, such as regasification terminals, pipelines, and storage facilities.
- India has been actively expanding its LNG infrastructure, with several new terminals under construction or planned.
- However, the pace of infrastructure development will need to keep up with the growing demand for natural gas to ensure that the benefits of LNG imports are fully realized.

Conclusion

The United States' ascent as India's second-largest LNG supplier marks a significant shift in the global energy landscape. This development underscores the growing importance of the US as an energy partner for India and the changing dynamics of India's energy security strategy. As India continues to navigate the complexities of the LNG market, it will need to balance its domestic production goals with the need for affordable and reliable imported LNG. The success of this strategy will depend on the country's ability to forge strategic partnerships, invest in infrastructure, and navigate the geopolitical landscape while prioritizing environmental sustainability.

Source: **The Hindu BL**

UPSC Mains Practice Question

Q. Discuss the implications of this development on India's energy security and bilateral relations with the US.

[2.22] Ethics of Hunger Strikes as a Mode of Protest

Syllabus: Ethics [GS Paper- 4]

Context

Hunger strikes have emerged as a significant form of protest throughout history, often employed by individuals or groups seeking to draw attention to social injustices or political grievances. This method of non-violent resistance raises complex ethical questions, particularly regarding the rights of the protester versus the responsibilities of the state and medical professionals.

Historical Context

- **Origins and Evolution: The practice of hunger striking has historical roots across various cultures, serving as a form of protest against injustice. In the late 19th century, political prisoners in Russia utilized hunger strikes to resist oppressive regimes. This method gained further prominence in the early 20th century when suffragettes employed it to demand recognition as political prisoners, often facing severe consequences such as force-feeding by authorities.**
- **Irish Republican Hunger Strikes: Hunger strikes by Irish republicans, particularly during the 1980s, significantly influenced public perception and demonstrated the effectiveness of this protest method. The 1920 death of Terence MacSwiney after a hunger strike against British rule highlighted the extreme personal sacrifices involved, galvanizing support for the republican cause. Such events underscored the potential of hunger strikes to evoke public sympathy and pressure governments to address grievances.**
- **Hunger Strikes in India: In India, hunger strikes have been a traditional protest method against colonial rule and social injustices. Notable figures like Mahatma Gandhi and Bhagat Singh used hunger strikes to mobilize public opinion and challenge oppressive practices. The colonial government often responded with force-feeding, raising ethical concerns about the treatment of hunger strikers and the state's responsibility towards them.**

Ethical Dilemmas

- **Autonomy vs. Intervention: Hunger strikes present a significant ethical dilemma between respecting the protester's autonomy and the state's duty to preserve life. Protesters often assert their right to refuse food as a form of self-expression and protest. However, as their health deteriorates, medical professionals face the difficult decision of whether to intervene, potentially overriding the protester's wishes. This raises questions about informed consent and the role of medical ethics in such situations.**
- **Force-Feeding and Medical Ethics: Force-feeding hunger strikers is highly contentious, pitting medical ethics against state interests. The World Medical Association has condemned force-feeding as inhumane and degrading, emphasizing that medical professionals should respect the wishes of patients, including hunger strikers. The American Medical Association supports this stance, advocating for non-intervention unless the individual is unable to make informed decisions due to medical conditions.**
- **The Role of Medical Professionals: Medical professionals often face a conflict of loyalty between their ethical obligations to patients and their responsibilities to institutional authorities. This dual loyalty complicates the management of hunger strikes, as healthcare providers may be pressured to prioritize institutional stability over patient autonomy. The ethical principle of "do no harm" is challenged when harm may arise both from the act of hunger striking and from potential medical interventions.**

Societal Implications

- Addressing Grievances: **Hunger strikes often emerge from deep-seated grievances that require societal attention. The act of fasting can serve as a catalyst for dialogue and change, drawing public attention to issues that may otherwise be overlooked. Societies must grapple with the underlying causes of hunger strikes, such as social injustice, political repression, and human rights violations, to prevent individuals from resorting to such extreme measures.**
- **Public Perception and Response: The public's reaction to hunger strikes can significantly influence their effectiveness. High-profile cases often garner media attention, leading to public outcry and pressure on authorities to respond to the protester's demands. However, this can also lead to backlash, where authorities may dismiss the hunger strike as a manipulative tactic, further complicating the ethical landscape surrounding the issue.**

Conclusion

Hunger strikes remain a potent form of protest, deeply embedded in the fabric of social and political movements. They highlight the ethical complexities surrounding individual autonomy, medical intervention, and state responsibility. As societies continue to confront issues of injustice and inequality, the ethical dilemmas posed by hunger strikes will persist, necessitating ongoing dialogue and reflection on the rights of protesters and the obligations of those in power. Addressing the root causes of discontent is essential to mitigate the need for such extreme forms of protest, ensuring that the voices of individuals are heard and respected within the societal framework.

Source: The Hindu

UPSC Mains Practice Question

Q. Examine the ethics of hunger strikes as a mode of protest. Discuss its moral implications, effectiveness, and the ethical responsibilities of stakeholders involved.

[2.23] Direct-Seeded Rice and Zero-Tillage Wheat

Syllabus: Science and Technology [GS Paper-3]

Context

The agricultural landscape in India is undergoing significant changes, particularly in the cultivation of rice and wheat. The introduction of innovative technologies is critical to addressing the challenges posed by climate change, labour shortages, and the need for sustainable farming practices. A recent development in this context is the formation of a joint venture between Mahyco, a prominent Indian seed company, and RiceTec, a U.S.-based agricultural biotechnology firm. This collaboration, named "Paryan," aims to promote herbicide-tolerant (HT) rice and wheat varieties suited for direct seeding and zero-tillage cultivation methods.

Overview of the Joint Venture

Formation of Paryan

Mahyco and RiceTec have established a 50:50 joint venture called Paryan to develop and market sustainable, herbicide-tolerant varieties of rice and wheat. This collaboration is part of Mahyco's strategy to partner with global seed companies, following its successful alliance with Monsanto. Paryan will leverage RiceTec's proprietary technologies to introduce climate-smart agricultural practices in India, particularly focusing on Direct Seeded Rice (DSR) and zero-tillage wheat.

Objectives of Paryan

The primary objectives of Paryan include:

- **Development of Herbicide-Tolerant Varieties:** Paryan aims to introduce non-GMO HT rice and wheat varieties that can withstand the herbicide imazethapyr, allowing farmers to manage weeds effectively without damaging the crops.
- **Promotion of Sustainable Farming Practices:** The joint venture seeks to encourage environmentally friendly farming methods, reducing the need for traditional tillage and minimizing greenhouse gas emissions.
- **Support for Farmers:** Paryan intends to provide comprehensive support to farmers, including training on the new technologies and assistance in the transition to DSR and zero-tillage practices.

Technological Innovations

1. Direct Seeded Rice (DSR)

The DSR method involves sowing rice seeds directly into the field rather than transplanting seedlings. This approach has several advantages, including:

- **Reduced Water Usage:** DSR requires significantly less water compared to traditional transplanting methods. While conventional puddling methods necessitate around 15 irrigations, DSR can reduce this to about 10 irrigations, leading to water conservation.
- **Lower Labor Costs:** The DSR method reduces labor requirements associated with transplanting, making it a more cost-effective option for farmers.
- **Mitigation of Greenhouse Gas Emissions:** By minimizing the need for puddling, DSR helps lower methane emissions, contributing to a more sustainable agricultural practice.
- Zero-Tillage Wheat
- Zero-tillage (ZT) cultivation involves sowing wheat directly into the stubble of the previous crop without plowing the field. This method offers several benefits:
- **Soil Health Preservation:** ZT helps maintain soil structure and reduces erosion, promoting long-term soil health.
- **Time and Cost Efficiency:** Farmers can save time and costs associated with land preparation, as ZT eliminates the need for plowing and reduces fuel consumption.
- **Stubble Management:** The approach addresses the issue of stubble burning, a prevalent practice that contributes to air pollution. By incorporating stubble into the soil, ZT promotes nutrient cycling and enhances soil fertility.

Economic Implications

- **Cost Analysis: The cost of adopting the new technologies through Paryan is competitive compared to traditional methods. For instance, the cost of using hybrid rice seeds with the herbicide imazethapyr is estimated to be around ₹5,150 per acre. In contrast, conventional methods, which involve a complex mix of herbicides and additional labor for transplanting, can cost approximately ₹4,000 per acre. However, this does not account for the additional expenses associated with tractor rentals and labor, which can range from ₹6,500 to ₹7,000 per acre.**
- **Potential Savings: Farmers adopting DSR and zero-tillage wheat can expect significant savings in terms of water and labor costs. Moreover, the reduction in methane emissions associated with DSR can lead to potential carbon credits, providing an additional revenue stream for farmers.**

Market Potential

- **Current Agricultural Landscape: Rice and wheat are staple crops in India, with rice cultivated across approximately 44 million hectares and wheat on about 30 million hectares. Despite the extensive area under cultivation, the adoption of hybrid varieties remains low, with hybrids accounting for only 9% of rice and an even smaller percentage in wheat.**
- **Future Prospects: The introduction of Paryan's technologies is expected to enhance the adoption of hybrid varieties in rice and wheat cultivation. The successful implementation of DSR and zero-tillage practices could lead to increased yields and improved profitability for farmers, particularly in states like Punjab, Haryana, Uttar Pradesh, and Bihar, where these crops are predominantly grown.**

Challenges and Considerations

- **Adoption Barriers**

Despite the advantages of DSR and zero-tillage practices, several challenges may hinder widespread adoption:

  - **Knowledge Gaps:** Farmers may lack awareness and understanding of the new technologies, necessitating comprehensive training and support from Paryan.
  - **Infrastructure Limitations:** The availability of necessary equipment, such as seed-cum-fertilizer drills for zero-tillage, may be limited in some regions.
  - **Regulatory Approvals:** The joint venture has applied for government regulatory approval for the use of FreeHit zero-tillage technology, which is crucial for its implementation in the upcoming Rabi season.

- **Environmental Considerations**

While the technologies promote sustainability, it is essential to monitor their long-term environmental impacts. Ongoing research and field studies will be vital to assess the effectiveness of DSR and zero-tillage practices in improving soil health and ecosystem balance.

Conclusion

The joint venture between Mahyco and RiceTec, through Paryan, represents a significant step towards modernizing rice and wheat cultivation in India. By promoting herbicide-tolerant varieties and sustainable farming practices, Paryan aims to enhance agricultural productivity while addressing pressing environmental concerns. As the agricultural landscape continues to evolve, the success of this venture could serve as a model for future collaborations in the agricultural sector, ultimately benefiting farmers and the environment alike.

Source: The Indian Express

UPSC Prelims Practice Question

Q. Which of the following is a key benefit of adopting Direct-Seeded Rice (DSR) and Zero-Tillage Wheat practices in agriculture?

A) Increased use of chemical fertilizers
B) Higher water consumption
C) Reduced labor costs and improved soil health
D) Increased dependence on manual weeding

Answer: C

[2.24] India's Mineral Imports

Syllabus: Indian Economy [GS Paper-3]

Context

India's mineral import landscape has undergone a significant transformation over the past five years, with total imports soaring by 80% to reach ₹68,633 crore. This surge reflects the growing demand for various minerals essential for industrial growth, technological advancements, and infrastructure development. As the country strives for self-reliance in critical minerals, understanding the factors driving this increase is crucial for policymakers, industry stakeholders, and the economy at large.

Overview of Mineral Imports

- **Current Statistics: In the fiscal year 2022-23, India's mineral imports were valued at ₹68,633 crore, marking a substantial increase from previous years. This rise can be attributed to several factors, including increased industrial activity, infrastructure projects, and the transition towards renewable energy sources.**
- Key Minerals Imported
- India's mineral imports encompass a wide range of materials, including:
- **Copper:** With a reliance of approximately 93% on imports, copper is vital for electrical wiring, plumbing, and telecommunications.
- **Lithium and Nickel:** India imports 100% of its lithium and nickel requirements, which are critical for battery production in electric vehicles and renewable energy storage.
- **Coal:** Despite having significant domestic reserves, India imported 215 million tonnes of coal valued at ₹11,605 crore in 2020-21, highlighting the gap between demand and local production.
- **Diamonds:** India is a leading importer of uncut diamonds, primarily for cutting and polishing, with imports valued at ₹12,835 crore in 2020-21.

Factors Driving Increased Mineral Imports

- **Industrial Growth and Urbanization: India's rapid industrialization and urbanization have led to an unprecedented demand for minerals. The construction and manufacturing sectors are expanding, driving the need for raw materials such as steel, copper, and cement.**
- **Transition to Renewable Energy: The Indian government has set ambitious targets for renewable energy, aiming to achieve 50% of its cumulative installed power capacity from non-fossil sources by 2030. This transition requires substantial quantities of critical minerals like lithium, cobalt, and nickel for battery production and renewable energy technologies.**

- **Global Supply Chain Vulnerabilities:** **The COVID-19 pandemic exposed vulnerabilities in global supply chains, prompting India to diversify its sources of mineral imports. This shift aims to reduce dependency on a few countries, particularly China, which has dominated the supply of various minerals.**

Economic Implications

- **Impact on Trade Balance:** **The surge in mineral imports has implications for India's trade balance. While increased imports can stimulate economic growth, they also contribute to a widening trade deficit. Policymakers must balance the need for mineral imports with strategies to enhance domestic production.**
- **Job Creation and Economic Development:** **The mining sector plays a crucial role in job creation and economic development. As mineral imports rise, there is an opportunity for the government to invest in domestic mining initiatives, thereby creating jobs and boosting local economies.**
- **Investment in Mining Infrastructure:** **To support the growing demand for minerals, India must invest in mining infrastructure. This includes enhancing exploration activities, developing processing facilities, and improving transportation networks to facilitate the efficient movement of minerals.**

Government Initiatives

- **Policy Reforms:** **In response to the rising demand for minerals, the Indian government has implemented several policy reforms aimed at boosting domestic production. Key initiatives include:**
    - **Mines and Minerals (Development and Regulation) Amendment Act, 2023:** This act aims to streamline the mining process and encourage private sector participation in mineral exploration and production.
    - **Khanij Bidesh India Ltd. (KABIL):** This initiative focuses on acquiring overseas mineral assets to secure a steady supply of critical minerals, including lithium and cobalt.
- **International Collaborations:** **India has actively sought international partnerships to enhance its mineral supply chain. The formation of the US-led Minerals Security Partnership (MSP) is a significant step towards diversifying import sources and reducing dependency on single countries.**
- **Exploration and Research:** **The Geological Survey of India (GSI) has ramped up exploration activities for critical minerals. Recent efforts have identified significant lithium reserves in Jammu and Kashmir, which could bolster domestic production and reduce reliance on imports.**

Future Outlook

- **Increasing Demand for Critical Minerals:** **As India accelerates its transition to a green economy, the demand for critical minerals is expected to rise further. Policymakers must prioritize the development of domestic resources while continuing to engage in international partnerships to secure a stable supply.**
- **Focus on Sustainable Practices:** **The future of mineral imports will depend on the industry's ability to adopt sustainable practices. Emphasizing responsible mining and environmental stewardship will be crucial for maintaining social license and ensuring long-term viability.**
- **Enhancing Domestic Production:** **To reduce import dependency, India must invest in enhancing domestic mineral production capabilities. This includes exploring new mineral deposits, improving extraction technologies, and fostering a skilled workforce in the mining sector.**

Conclusion

India's mineral import surge, reaching ₹68,633 crore, highlights the country's growing reliance on external sources for essential minerals. As industrialization, urbanization, and the transition to renewable energy accelerate, the demand for minerals will continue to rise. The government's proactive measures, including policy reforms and international collaborations, are essential for securing a stable supply of critical minerals while promoting sustainable practices. Balancing import needs with domestic production capabilities will be crucial for India's economic growth and development in the coming years.

Source: The hindu

UPSC Mains Practice Question

Q. Discuss the factors contributing to the 80% increase in India's mineral imports over the past five years. What are the implications of this trend for India's economy and its mineral resource management?

[2.25] The Broadcasting Services (Regulation) Bill, 2023

Syllabus: Governance [GS Paper-2]

Context

The Broadcasting Services (Regulation) Bill, 2023, represents a significant overhaul of India's broadcasting regulatory framework, aiming to replace the outdated Cable Television Networks (Regulation) Act of 1995. This proposed legislation seeks to address the evolving landscape of media consumption, particularly with the rise of over-the-top (OTT) platforms and digital news services. However, the approach taken by the Ministry of Information and Broadcasting (MIB) in consulting stakeholders has raised concerns about transparency and inclusivity in the legislative process.

Background of the Bill

Need for Regulation

The rapid advancement of technology and the proliferation of digital content have necessitated a comprehensive regulatory framework. The existing laws are ill-equipped to handle the complexities introduced by new media formats, including OTT services like Netflix and Amazon Prime, which have gained immense popularity in India. The Broadcasting Services (Regulation) Bill, 2023, aims to create a more adaptable and robust regulatory environment to ensure consumer protection and promote local content.

Key Objectives

The primary objectives of the Bill include:

- **Consolidation of Broadcasting Regulations:** The Bill seeks to unify various broadcasting regulations under a single framework, making it easier for service providers to comply with the law.
- **Regulation of OTT Platforms:** By extending regulatory oversight to OTT services, the Bill aims to ensure that these platforms adhere to content standards similar to traditional broadcasters.
- **Consumer Protection:** The legislation emphasizes viewer rights, including grievance redressal mechanisms and transparency in content regulation.

Provisions of the Broadcasting Services (Regulation) Bill, 2023

Regulatory Structure

The Bill proposes the establishment of a new regulatory body, the Broadcasting Authority of India (BAI), which will oversee the implementation of the regulations. The BAI will be responsible for:

- **Content Evaluation Committees (CECs):** These committees will evaluate and certify content before it is broadcasted, ensuring compliance with established guidelines.
- **Broadcast Advisory Council:** This council will consist of representatives from various sectors, including media, child welfare, and human rights, to provide recommendations on content regulation.

Self-Regulation Mechanism

The Bill introduces a two-tier self-regulation system, requiring broadcasters to appoint grievance officers and establish self-regulatory organizations. This structure aims to address complaints at the initial level before escalating them to the BAI.

Content Regulation

The Bill outlines specific content codes to address issues such as hate speech, misinformation, and violence. It mandates broadcasters to adhere to these codes, promoting responsible content creation while balancing freedom of expression.

Concerns Regarding the Consultation Process

Limited Stakeholder Engagement

The MIB has been criticized for conducting private consultations with select stakeholders, which raises concerns about the inclusivity of the legislative process. Critics argue that this approach excludes a broad range of voices, including independent creators, civil society, and smaller media organizations, who may be significantly impacted by the new regulations.

Chilling Effect on Free Speech

The expansive regulatory framework proposed in the Bill has been described as potentially having a chilling effect on free speech. The fear of government oversight and the need for content certification may lead to self-censorship among broadcasters and content creators, stifling diverse perspectives and creative expression.

Lack of Transparency

The use of unique watermarks on draft copies of the Bill to prevent leaks further complicates the issue of transparency. This method of gatekeeping information undermines public trust and raises questions about the government's commitment to an open and democratic legislative process.

Implications for the Broadcasting Industry

Impact on OTT Platforms

The inclusion of OTT services under the regulatory framework signifies a shift in how digital content will be governed. While this may lead to improved content standards, it also raises concerns about the potential for excessive regulation that could hinder innovation and growth in the sector.

Effects on Independent Media

Independent media outlets and content creators may face increased scrutiny and regulatory burdens, which could limit their ability to operate freely. The Bill's provisions may disproportionately affect smaller players in the industry, consolidating power among larger, established broadcasters.

Balancing Regulation and Freedom

The challenge lies in finding a balance between necessary regulation to protect consumers and the preservation of freedom of expression. Policymakers must ensure that the regulations do not become tools for censorship or suppression of dissenting voices.

Conclusion

The Broadcasting Services (Regulation) Bill, 2023, presents an opportunity to modernize India's broadcasting regulatory framework in response to the changing media landscape. However, the approach taken by the MIB in consulting stakeholders raises significant concerns about transparency, inclusivity, and the potential impact on free speech. As the Bill moves forward, it is crucial for the government to engage in meaningful public consultations that include diverse perspectives, ensuring that the final legislation reflects the interests of all stakeholders in the broadcasting ecosystem. Balancing regulation with the protection of free expression will be essential for fostering a vibrant and diverse media landscape in India.

Source: The hindu

UPSC Prelims Practice Question

Q. Which of the following statements is true regarding the Broadcasting Services (Regulation) Bill, 2023?

A) The Bill aims to replace the Cable Television Networks (Regulation) Act of 1995 and includes provisions for regulating only traditional broadcasting services.

B) The Bill establishes a multi-layered regulatory structure that includes a Broadcasting Authority of India and mandates Content Evaluation Committees for content certification.

C) OTT platforms are required to obtain the same registration as traditional broadcasters under the new Bill.

D) The Bill does not address consumer protection or grievance redressal mechanisms for viewers.

Answer: B

[2.26] Direct-Seeded Rice and Zero-Tillage Wheat

Syllabus: Science and Technology [GS Paper-3]

Context

The agricultural landscape in India is undergoing significant changes, particularly in the cultivation of rice and wheat. The introduction of innovative technologies is critical to addressing the challenges posed by climate change, labour shortages, and the need for sustainable farming practices. A recent development in this context is the formation of a joint venture between Mahyco, a prominent Indian seed company, and RiceTec, a U.S.-based agricultural biotechnology firm. This collaboration, named "Paryan," aims to promote herbicide-tolerant (HT) rice and wheat varieties suited for direct seeding and zero-tillage cultivation methods.

Overview of the Joint Venture

Formation of Paryan

Mahyco and RiceTec have established a 50:50 joint venture called Paryan to develop and market sustainable, herbicide-tolerant varieties of rice and wheat. This collaboration is part of Mahyco's strategy to partner with global seed companies, following its successful alliance with Monsanto. Paryan will leverage RiceTec's proprietary technologies to introduce climate-smart agricultural practices in India, particularly focusing on Direct Seeded Rice (DSR) and zero-tillage wheat.

Objectives of Paryan

The primary objectives of Paryan include:

- **Development of Herbicide-Tolerant Varieties:** Paryan aims to introduce non-GMO HT rice and wheat varieties that can withstand the herbicide imazethapyr, allowing farmers to manage weeds effectively without damaging the crops.
- **Promotion of Sustainable Farming Practices:** The joint venture seeks to encourage environmentally friendly farming methods, reducing the need for traditional tillage and minimizing greenhouse gas emissions.
- **Support for Farmers:** Paryan intends to provide comprehensive support to farmers, including training on the new technologies and assistance in the transition to DSR and zero-tillage practices.

Technological Innovations

1. Direct Seeded Rice (DSR)

The DSR method involves sowing rice seeds directly into the field rather than transplanting seedlings. This approach has several advantages, including:

- **Reduced Water Usage:** DSR requires significantly less water compared to traditional transplanting methods. While conventional puddling methods necessitate around 15 irrigations, DSR can reduce this to about 10 irrigations, leading to water conservation.
- **Lower Labor Costs:** The DSR method reduces labor requirements associated with transplanting, making it a more cost-effective option for farmers.
- **Mitigation of Greenhouse Gas Emissions:** By minimizing the need for puddling, DSR helps lower methane emissions, contributing to a more sustainable agricultural practice.

2. Zero-Tillage Wheat

Zero-tillage (ZT) cultivation involves sowing wheat directly into the stubble of the previous crop without plowing the field. This method offers several benefits:

- **Soil Health Preservation:** ZT helps maintain soil structure and reduces erosion, promoting long-term soil health.
- **Time and Cost Efficiency:** Farmers can save time and costs associated with land preparation, as ZT eliminates the need for plowing and reduces fuel consumption.
- **Stubble Management:** The approach addresses the issue of stubble burning, a prevalent practice that contributes to air pollution. By incorporating stubble into the soil, ZT promotes nutrient cycling and enhances soil fertility.

Economic Implications

- **Cost Analysis:** **The cost of adopting the new technologies through Paryan is competitive compared to traditional methods. For instance, the cost of using hybrid rice seeds with the herbicide imazethapyr is estimated to be around ₹5,150 per acre. In contrast, conventional methods, which involve a complex mix of herbicides and additional labor for transplanting, can cost approximately ₹4,000 per acre. However, this does not account for the additional expenses associated with tractor rentals and labor, which can range from ₹6,500 to ₹7,000 per acre.**

- **Potential Savings: Farmers adopting DSR and zero-tillage wheat can expect significant savings in terms of water and labor costs. Moreover, the reduction in methane emissions associated with DSR can lead to potential carbon credits, providing an additional revenue stream for farmers.**

Market Potential

- **Current Agricultural Landscape: Rice and wheat are staple crops in India, with rice cultivated across approximately 44 million hectares and wheat on about 30 million hectares. Despite the extensive area under cultivation, the adoption of hybrid varieties remains low, with hybrids accounting for only 9% of rice and an even smaller percentage in wheat.**
- **Future Prospects: The introduction of Paryan's technologies is expected to enhance the adoption of hybrid varieties in rice and wheat cultivation. The successful implementation of DSR and zero-tillage practices could lead to increased yields and improved profitability for farmers, particularly in states like Punjab, Haryana, Uttar Pradesh, and Bihar, where these crops are predominantly grown.**

Challenges and Considerations

- **Adoption Barriers**

Despite the advantages of DSR and zero-tillage practices, several challenges may hinder widespread adoption:

  - **Knowledge Gaps:** Farmers may lack awareness and understanding of the new technologies, necessitating comprehensive training and support from Paryan.
  - **Infrastructure Limitations:** The availability of necessary equipment, such as seed-cum-fertilizer drills for zero-tillage, may be limited in some regions.
  - **Regulatory Approvals:** The joint venture has applied for government regulatory approval for the use of FreeHit zero-tillage technology, which is crucial for its implementation in the upcoming Rabi season.

- **Environmental Considerations**

While the technologies promote sustainability, it is essential to monitor their long-term environmental impacts. Ongoing research and field studies will be vital to assess the effectiveness of DSR and zero-tillage practices in improving soil health and ecosystem balance.

Conclusion

The joint venture between Mahyco and RiceTec, through Paryan, represents a significant step towards modernizing rice and wheat cultivation in India. By promoting herbicide-tolerant varieties and sustainable farming practices, Paryan aims to enhance agricultural productivity while addressing pressing environmental concerns. As the agricultural landscape continues to evolve, the success of this venture could serve as a model for future collaborations in the agricultural sector, ultimately benefiting farmers and the environment alike.

Source: The Indian Express

UPSC Prelims Practice Question

Q. Which of the following is a key benefit of adopting Direct-Seeded Rice (DSR) and Zero-Tillage Wheat practices in agriculture?

A) Increased use of chemical fertilizers
B) Higher water consumption
C) Reduced labor costs and improved soil health
D) Increased dependence on manual weeding

Answer: C

[2.27] Role of Retroviruses in Evolution of Human Genome

Syllabus - Science and Technology [GS Paper-3]

Context

Most viruses can't really affect the genome but retroviruses can integrate and reshape the genomes of the hosts they infect.

About

- A virus is an infectious microbe which includes a section of nucleic acid (either DNA or RNA) surrounded by a protein coat referred to as capsid.
- Viruses are not taken into consideration living organisms due to the fact they can't perform metabolic procedures on their own.
- A virus cannot reflect alone; instead, it should infect cells and use additives of the host cell to make copies of itself.
- Often, a deadly disease ends up killing the host cell in the manner, inflicting harm to the host organism.
- Well-regarded examples of viruses inflicting human disease encompass AIDS, COVID-19, measles and smallpox.

Retrovirus

- Retroviruses have an RNA genome; can opposite-transcribe it to DNA and for that reason insert it into the host's genome.
- This integration may be pretty solid, permitting the virus to persist inside the host for long durations.
- **Types and Examples:** There are numerous varieties of retroviruses, along with Human Immunodeficiency Virus (HIV), which causes AIDS and the Human T-cell Leukemia Virus (HTLV), that's related to certain sorts of most cancers.

Endogenous Retroviruses (ERVs)

- The retrovirus invasions can occasionally reduce to rubble the mixing technique, inflicting 'zombie' areas in the host's genome. These components are called endogenous retroviruses (ERVs).
- ERVs usually can't reflect and produce useful proteins given that they lack their regulatory areas.
- If the integrations contain the germ cells — i.e. People who produce the gametes, sperm cells and ova — the host could be able to transmit its ERVs to its offspring. This happens in rare instances.
- **Evolution:** Over the tens of lots of years of mammalian evolution, many retroviruses have left some of the genomic factors in the genome, form of the genetic fossils of early infections.
- These factors have long lost the ability to produce viruses but researchers accept as true that they have performed a big hand inside the evolution in their hosts.
- Around 8% of the human genome is composed of ERVs.

Influence on Human Genome

- A right instance in there has an effect on the syncytins, a category of genes concept to be descended from an ERV.
- Syncytins are critical genes concerned in placental development; many ERVs are also fairly expressed inside the placenta.

- These genes in the beginning got here from viruses and had been received by means of risk as the mammalian host evolved.
- But at some point they have become essential for the host because they helped create the placenta.
- Over time, the authentic ERV's envelope gene (env) changed into notion to be modified or changed with the aid of new versions, forming the syncytin genes as visible today in one-of-a-kind mammal species.
- **Tumours in colorectal cancer:** ERVs are also involved in cellular-type differentiation.
    - Researchers counseled that one human ERV detail — or a portion of its DNA — referred to as LTR10 considerably impacts the formation of tumours in colorectal most cancers.
    - The LTR10 retroelement appears to have been incorporated into the genome a few 30 million years ago.
    - The retroelement's presence should produce huge genomic modifications that could in turn have an effect on the expression of the genes involved in tumour formation.

Significance of the Study

- In future, as studies techniques continue to increase, scientists might also find extra exquisite insights into the evolutionary significance of ERVs and their contribution to human biology.
- Such expertise will result in breakthroughs in regenerative medication, most cancer treatment options, and customized medicinal drugs, improving understanding of human health and evolution.

Source: ***The Hindu***

Prelims PYQ

1. Consider the following statements:

1. Adenoviruses have single-stranded DNA genomes whereas retroviruses have double-stranded DNA genomes.

2. Common cold is sometimes caused by an adenovirus whereas AIDS is caused by a retrovirus.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

Ans: (b)

- Most viruses can't really affect the genome but retroviruses can integrate and reshape the genomes of the hosts they infect.
- A virus is an infectious microbe which includes a section of nucleic acid (either DNA or RNA) surrounded by a protein coat referred to as capsid.
- Viruses are not taken into consideration living organisms due to the fact they can't perform metabolic procedures on their own.
- A virus cannot reflect alone; instead, it should infect cells and use additives of the host cell to make copies of itself.

- Often, a deadly disease ends up killing the host cell in the manner, inflicting harm to the host organism.
- Well-regarded examples of viruses inflicting human disease encompass AIDS, COVID-19, measles and smallpox.

[2.28] Poor Auction for the Lithium block in Jammu and Kashmir

Syllabus - Polity and Governance [GS Paper-2]

Context

The Ministry of Mines recently scrapped the auction for the lithium block in Jammu and Kashmir's (J&K's) Reasi district for the second time, following poor response from investors.

About

- The government in 2023 found its first lithium deposits in Jammu and Kashmir with envisioned reserves of 5.9 million metric lots.
- In India, there is also potential to recover lithium from brines of Sambhar and Pachpadra regions in Rajasthan, and Rann of Kutch, Gujarat.

Reasons for poor auction

- The difficulties around extracting and processing lithium from tough rock pegmatite deposits mixed with underdeveloped mineral reporting standards used in tender files played a significant role in deterring investors.
- India's current resource classification rules, in significant part based on the **United Nations Framework Classification for Resources (UNFC)** do not offer enough data to determine the economic potential of mining a mineral block.

Suggestions to draw investors

- Most mining companies, stock exchanges, and regulatory bodies the world over adhere to the **Committee for Mineral Reserves International Reporting Standards (CRIRSCO)** template, which requires the reporting of economically possible reserves with excessive geological self belief shown by research to as a minimum a pre-feasibility level.
- To entice private funding in the sector, India needs to undertake CRIRSCO-aligned world over-compliant mineral reporting requirements.
- The National Committee for Reporting Mineral Resources and Reserves in India (NACRI) has evolved and maintained the **Indian Mineral Industry Code (IMIC)** due to the fact 2019, which is regarded by CRIRSCO as a compliant code.

Lithium

- Lithium is a chemical element with the image Li and atomic variety 3. It is a gentle, silvery-white alkali metallic.
- **Properties:** Like all alkali metals, lithium is pretty reactive and flammable, and needs to be saved in vacuum, inert surroundings, or inert liquid which includes purified kerosene or mineral oil.
- **Global Reserves**
- Chile, Australia, Argentina, Boliby and China comprise maximum of the reserves found to this point globally.

- Argentina, Boliby and Chile, also referred to as the 'Lithium Triangle' incorporate 54% of the arena's Lithium reserves.
- In Argentina the lithium is present in salt pans in the Atacama barren region and neighboring arid zones in the area.

Source: ***The Indian Express***

Prelims PYQ

1. Which one of the following pairs of metals constitutes the lightest metal and the heaviest metal, respectively? (2008)

(a) Lithium and mercury

(b) Lithium and osmium

(c) Aluminium and osmium

(d) Aluminium and mercury

Ans: (b)

- The Ministry of Mines recently scrapped the auction for the lithium block in Jammu and Kashmir's (J&K's) Reasi district for the second time, following poor response from investors.
- The government in 2023 found its first lithium deposits in Jammu and Kashmir with envisioned reserves of 5.9 million metric lots.
- In India, there is also potential to recover lithium from brines of Sambhar and Pachpadra regions in Rajasthan, and Rann of Kutch, Gujarat.

[2.29] Sub Categorisation of Scheduled Caste Reservation

Syllabus - Polity and Governance [GS Paper-2]

Context

The Supreme Court of India allowed the sub-categorisation of scheduled castes in reservations, allowing wider protection for underrepresented groups in a 6:1 landmark verdict.

About

- The Supreme Court addressed whether sub-class of Scheduled Castes and Scheduled Tribes is permissible for the purpose of reservation.
- This ruling has critical outcomes for states that purpose to provide broader protection to certain castes which are significantly underrepresented in comparison to the so-referred to as dominant scheduled castes.

2004 Judgment Revisited

- The bench is revisiting its 2004 judgement in the case of **EV Chinnaiah vs. State of Andhra Pradesh.**
- In that judgement, the courtroom had held that Scheduled Castes formed a homogenous group, and therefore, no sub-division among them was permissible.

- Now, the court is reconsidering whether or not this ruling needs to be modified.

Significance of Recent Judgements

- **Graded Inequalities:** The most important argument for sub-categorisation of SCs has been the graded inequalities amongst SC communities.
  - The thrust of it's been that even some of the marginalised, there are groups which have less access to basic facilities.
- **Unequal Representation:** Some communities are more backward and have much less illustration than others.
  - For instance, the Madiga community has claimed that the services, consisting of that of reservation, intended for the SC category were cornered through the Mala community, with the Madigas being unnoticed.
- **Legal Standpoint:** A 5-judge Bench headed by Justice Arun Mishra has affirmed the competence of the States to provide preferential remedy to the weakest among the Scheduled Castes without depriving different castes of any benefit.
  - The Court has mentioned that the Scheduled Castes list incorporates many castes and can't be dealt with as a homogeneous institution.
- **Equitable Distribution of Benefits:** The Union government has formed a committee of Secretaries to assess and work out a method for the equitable distribution of services, schemes, and tasks to the most backward groups amongst the over 1,200 Scheduled Castes throughout the country.
- **Recognizing Diversity:** The court docket stated that 'ancient and empirical evidence shows that Scheduled castes are not a homogenous class'
  - This popularity of diversity in the SC community is a departure from the sooner stance.

Possible Challenges of Sub Categorisation in Scheduled Castes

- These are primarily based on the felony and practical demanding situations related to it.
- **Legal Challenges:** The Supreme Court held that the State did not have the power to unilaterally sub-categorise communities in the list of SCs or Scheduled Tribes (STs).
  - The Constitution has furnished that those lists can only be made by Parliament and notified by the President.
- **Data of socio-economic status:** The population facts related to SC, ST, and OBC classes aren't updated since the 2011 census.
  - It hampers the objective and medical foundation for sub-categorisation.
- **Untouchability:** The social and academic backwardness can't be applied to Scheduled Castes and Scheduled Tribes. The special treatment is given to the SCs because of untouchability with which they've suffered for a long time.

Conclusion

- The latest verdict allows state governments to sub-classify SCs for granting reservation benefits in admissions and public jobs. It overturns the earlier ruling that confined such sub-categorization.
- It recognises the want to address the varying degrees of disadvantage in the SC community and presents a more nuanced approach to reservation policies. It's a step towards ensuring equitable opportunities for all.

Source: ***The Hindu***

Mains PYQ

1. What are the two major legal initiatives by the State since Independence addressing discrimination abenefitst Scheduled Tribes (STs). (2017)

- The Supreme Court of India allowed the sub-categorisation of scheduled castes in reservations, allowing wider protection for underrepresented groups in a 6:1 landmark verdict.
- The Supreme Court addressed whether sub-class of Scheduled Castes and Scheduled Tribes is permissible for the purpose of reservation.
- This ruling has critical outcomes for states that purpose to provide broader protection to certain castes which are significantly underrepresented in comparison to the so-referred to as dominant scheduled castes.
- The bench is revisiting its 2004 judgement in the case of **EV Chinnaiah vs. State of Andhra Pradesh.**
- In that judgement, the courtroom had held that Scheduled Castes formed a homogenous group, and therefore, no sub-division among them was permissible.
- Now, the court is reconsidering whether or not this ruling needs to be modified.

[2.30] 30th meeting of the WMCC

Syllabus - International Relations [GS Paper-2]

Context

Recently India and China held the 30th meeting of the Working Mechanism for Consultation and Coordination on India-China Border Affairs (WMCC) in New Delhi.

About

- The WMCC on India-China Border Affairs was activated after the face-off at the Line of Actual Control started in May 2020.
- The discussion was "in-depth, positive and ahead-searching", and both sides agreed to maintain the momentum through mounted diplomatic and military channels.
- The talks come amid symptoms that the two nations are making efforts to remedy the stand-off alongside the Line of Actual Control (LAC) in eastern Ladakh.

Importance of Peace for India and China

- **Economic cooperation:** India and China are two of the sector's largest and fastest-growing economies and advanced relations can help in growth trade and investment.
- **Regional stability:** India and China are two principal powers in Asia, and their relations have a significant impact on regional stability.
- **Border security:** A peaceful relationship between the 2 nations is essential to keep border security and avoid any conflicts or misunderstandings alongside the border.
- **Geopolitics:** India and China are both important players inside the international geopolitical environment whose non violent co-existence is crucial to create a more strong and predictable international environment.

Challenges of India-China peace procedure

- **Military Build-up:** The military build-up by both countries along the border has improved tensions and made the peace method more challenging.
- **Historical Issues:** Historical issues, which include the 1962 Sino-Indian War, keep having an effect on the relationship between the two nations.
- **Border Disputes:** Despite numerous rounds of talks, the 2 sides have not been able to reach an enduring approach to the border dispute especially along the Line of Actual Control (LAC).

Way ahead

- India-China peace procedure calls for sustained efforts from both sides to cope with those demanding situations and build mutual agreement and expertise.
- There is a need to retain discussions thru army and diplomatic channels and to actively enforce the critical consensus reached by the leaders of the 2 countries to further stabilize the border scenario.
- Overall, peace between India and China is crucial for the economic, political, and strategic interests of both countries, in addition to regional and global balance.

Source:* *The Hindu

Mains PYQ

1. Border management is a complex task due to difficult terrain and hostile relations with some countries. Elucidate the challenges and strategies for effective border management. (2016)

- Recently India and China held the 30th meeting of the Working Mechanism for Consultation and Coordination on India-China Border Affairs (WMCC) in New Delhi.
- The WMCC on India-China Border Affairs was activated after the face-off at the Line of Actual Control started in May 2020.
- The discussion was "in-depth, positive and ahead-searching", and both sides agreed to maintain the momentum through mounted diplomatic and military channels.
- The talks come amid symptoms that the two nations are making efforts to remedy the stand-off alongside the Line of Actual Control (LAC) in eastern Ladakh.

[2.31] Legal Advisory Council

Syllabus - Polity and Governance [GS Paper-2]

Context

In recent years, there has been huge discussion about establishing a Legal Advisory Council.

About

- Several criminal problems of national and social significance have emerged from the existing government's legislative and policy projects, for example:
- The Electoral Bonds Scheme was declared unconstitutional by the Supreme Court for violating voter right to information.
    - Proactive proportionality testing ought to have averted this.

- In the Aadhaar Act,Supreme Court intervention might have been avoided with prior criminal scrutiny.
- Section 106(2) of the Bharatiya Nyay Sanhita, 2023, led to protests due to disproportionate penalties.
    - The government needed to delay enforcement for amendments.
- As many such troubles have arisen due to a lack of adequate examination in terms of criminal viability and impact exams.
- Therefore ,an evaluation of the government's legal consultancy procedure is wanted for higher legislative readability.

About Legal Advisory Council (LAC)

- It may be corresponding to the Economic Advisory Council (EAC) but mainly focused on legal topics.
- It will provide non-stop and knowledgeable legal inputs
- It could help in clarifying legislative motives and expecting prison challenges.
- **Composition:** It should include legal luminaries, eminent jurists, distinguished academicians, and researchers with specialisations in numerous fields that are often legislated upon by governments which include crook law, exchange law, global law, commercial enterprise legal guidelines, and taxation laws.
- **Functions**
    - Analyze criminal troubles referred by the government.
    - Assess impacts and consequences of contemplated legal guidelines.
    - Conduct suo motu studies on contemporary legal troubles.

How is it unique from the Law Commission of India?

- LAC could work with the Prime Minister's Office, not like the Law Commission, which operates under the Ministry of Law and Justice.
- The Law Commission is commonly reactive, recommending reforms to current laws, whereas the LAC would be proactive, addressing capacity troubles in imminent rules.

Conclusion and Way Forward

- Establishing a dynamic LAC and leveraging national law universities can improve the government's coping with legal challenges and legislative tactics.
- National law universities can help in growing constitutionally possible and socially perfect laws.
- They have the information to behavior legal viability and impact assessments, as seen in their involvement in reform committees.
- Funding and administrative guidance might be critical for the LAC's effectiveness.

Source: ***The Hindu***

Prelims PYQ

1. With reference to National Legal Services Authority, consider the following statements: (2013)

1. **Its objective is to provide free and competent legal services to the weaker sections of the society on the basis of equal opportunity.**

2. **It issues guidelines for the State Legal Services government to implement the legal programmes and schemes throughout the country.**

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

Ans: (c)

- In recent years, there has been huge discussion about establishing a Legal Advisory Council.
- Several criminal problems of national and social significance have emerged from the existing government's legislative and policy projects, for example:
- The Electoral Bonds Scheme was declared unconstitutional by the Supreme Court for violating voter right to information.
    - Proactive proportionality testing ought to have averted this.
- In the Aadhaar Act,Supreme Court intervention might have been avoided with prior criminal scrutiny.
- Section 106(2) of the Bharatiya Nyay Sanhita, 2023, led to protests due to disproportionate penalties.
    - The government needed to delay enforcement for amendments.
- As many such troubles have arisen due to a lack of adequate examination in terms of criminal viability and impact exams.
- Therefore ,an evaluation of the government's legal consultancy procedure is wanted for higher legislative readability.

[2.32] Enhanced Version of Existing CRISPR based Technology

Syllabus - Science & Technology [GS Paper-3]

Context

Recently scientists have developed an enhanced genome-editing system that can modify DNA more precisely and efficiently than existing CRISPR-based technologies.

About

- The CRISPR-Cas system is a tool to cut, delete, or add DNA sequences at precise locations, establishing distinctive windows to treat genetic problems, expand drought-resistant flora, and modify food crops.
- CRISPR takes place naturally in a few bacteria, as a part of their immune system that limits infections by recognising and destroying viral DNA.

CRISPR-Cas9

- Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) is a DNA sequence which is a part of the bacterial protection machine.
- Cas9 (CRISPR-related) is the name of the protein that transfers resistance.

- It is an enzyme that acts like a couple of molecular scissors, capable of cutting strands of DNA.
- It permits researchers to easily alter DNA sequences and modify gene function.
- CRISPR-based tools rely on the capability of the system to comprehend particular single-nucleotide adjustments in the DNA.

How does the CRISPR-Cas9 work?

- The CRISPR-Cas9 gene modifying tool makes use of a guide-RNA (gRNA) designed to locate and bind to a specific part of the target genome.
- The gRNA directs an enzyme, Cas9, to the goal website online, that is followed by a quick DNA series referred to as **protospacer adjoining motif (PAM)**.
- Cas9 recognises and binds to the PAM sequence, and acts as a molecular scissor that snips a few broken DNA.
- This automatically triggers the mobile's DNA repair gadget, which maintains the snipped part to insert the proper DNA sequence.

CRISPR's off-target problem

- The CRISPR-Cas9 system can also realise and reduce elements of the genome aside from the supposed element.
- Such "off-goal" outcomes are more commonplace whilst the use of the SpCas9 enzyme derived from Streptococcus pyogenes bacteria.
- To triumph over those troubles, researchers are exploring especially particular Cas9 enzymes from Francisella novicida bacteria called FnCas9.

Switching SpCas9 with FnCas9

- The scientist has engineered new variations of FnCas9 to decorate it without compromising its specificity.
- An improved FnCas9-based diagnostic may want to target almost twice the range of modifications in comparison to FnCas9, increasing the scope of detecting greater disease-inflicting genetic changes.
- Hence the improved FnCas9 cuts target DNA at a higher rate in comparison to unmodified FnCas9.

Source: ***The Hindu***

Mains PYQ

1. ***What are the research and developmental achievements in applied biotechnology? How will these achievements help to uplift the poorer sections of society? (2021)***

- Recently scientists have developed an enhanced genome-editing system that can modify DNA more precisely and efficiently than existing CRISPR-based technologies.
- The CRISPR-Cas system is a tool to cut, delete, or add DNA sequences at precise locations, establishing distinctive windows to treat genetic problems, expand drought-resistant flora, and modify food crops.
- CRISPR takes place naturally in a few bacteria, as a part of their immune system that limits infections by recognising and destroying viral DNA.

[2.33] State of the World's Mangroves, 2024 Report

Syllabus - Environment [GS Paper-3]

Context

The Global Mangrove Alliance (GMA) has recently released a report titled '**The State of the World's Mangroves, 2024**' on World Mangrove Day (26 July).

About

- **Distribution:**
  - Southeast Asia money owed for 33.6 percent of global mangrove cover with Indonesia on my own having 21 percent of the world's mangroves.
- **Area under hazard:**
  - Mangrove regions of Indonesia, northeast Brazil and northwest Mexico are experiencing significant losses.
  - Mangroves in Lakshadweep archipelago and on the coast of Tamil Nadu are significantly endangered.
- **Reasons for Loss:**
  - Conversion to aquaculture, oil palm plantations and rice cultivation collectively debts for 43 percent of mangrove losses between 2000 and 2020.
  - Shrimp farms which can be by and large built in the essential intertidal zones, resulting within the total removal of mangroves.

Mangroves

- A mangrove is a small tree or shrub that grows alongside coastlines, taking root in salty sediments, often underwater.
- Mangroves are flowering timber, belonging to the households Rhizophoraceae, Acanthaceae, Lythraceae, Combretaceae, and Arecaceae.
- **Features:**
  - **Saline Environment:** A speciality of mangroves is that they can live on under high antagonistic environments inclusive of high salt and low oxygen conditions.
    - The roots filter 90% of the salt they arrive into contact with in the saline and brackish water.
  - **Low oxygen:** Underground tissue of any plant needs oxygen for breathing. The mangrove root system absorbs oxygen from the environment.
  - **Store Freshwater:** Mangroves, like wasteland vegetation, store sparkling water in thick succulent leaves.
  - **Mangroves are viviparous:** Their seeds germinate at the same time as nevertheless attached to the parent tree. Once germinated, the seedling grows into a propagule.
    - The Sundarbans in West Bengal are the most important mangrove location within the global and a UNESCO World Heritage Site.
    - The 2nd largest mangrove forest in India is Bhitarkanika (Ramsar web site) in Odisha created by using the two river deltas of Rivers Brahmani and Baitarani.

Importance of Mangroves

- Act as natural limitations towards typhoon surge, coastal flooding and sea-stage upward push.
- They provide habitat for a numerous array of terrestrial organisms.

- Mangroves are powerhouses in terms of carbon storage.
- Sources of Livelihood.

Steps Taken

- **Indian Initiatives:**
  - **Mangrove Initiative for Shoreline Habitats & Tangible Incomes (MISHTI) Programme:** Aims to defend and revive mangrove ecosystems on the Indian coast while improving the socio-economic reputation of coastal communities.
  - **Conservation and Management of Mangroves and Coral Reefs:** The promotional measures are being applied through a Central Sector Scheme specifically 'Conservation and Management of Mangroves and Coral Reefs' under National Coastal Mission Programme of the Ministry of Environment, Forest & Climate Change.
- **Global Initiatives:**
  - **Global Mangrove Alliance (GMA):** It is a joint effort of more than 30 organizations, including IUCN, working to extend the worldwide quantity of mangrove habitat 20% by the year 2030.
  - **Mangrove Alliance for Climate (MAC):** It is an initiative led by the United Arab Emirates (UAE) and Indonesia, which includes India as its member, seeks to teach and spread awareness worldwide on the position of mangroves in curtailing global warming and its potential as a solution for climate change.

Source:* *The Hindu

Mains PYQ

1. ***Discuss the causes of depletion of mangroves and explain their importance in maintaining coastal ecology. (2019)***

- The Global Mangrove Alliance (GMA) has recently released a report titled '**The State of the World's Mangroves, 2024**' on World Mangrove Day (26 July).
- **Distribution:**
  - Southeast Asia money owed for 33.6 percent of global mangrove cover with Indonesia on my own having 21 percent of the world's mangroves.
- **Area under hazard:**
  - Mangrove regions of Indonesia, northeast Brazil and northwest Mexico are experiencing significant losses.
  - Mangroves in Lakshadweep archipelago and on the coast of Tamil Nadu are significantly endangered.
- **Reasons for Loss:**
  - Conversion to aquaculture, oil palm plantations and rice cultivation collectively debts for 43 percent of mangrove losses between 2000 and 2020.
  - Shrimp farms which can be by and large built in the essential intertidal zones, resulting within the total removal of mangroves.

[2.34] Kerala Wayanad Landslides

Syllabus - Disaster Management [GS Paper-3]

Context

Ecologist Madhav Gadgil, has stated that the disaster in Wayanad is a man-made tragedy, attributing it to the Kerala government's failure to implement crucial ecological recommendations.

About

- Massive landslides at Mundakkai, Chooralmala, Attamala, and Noolpuzha in Wayanad district buried large areas under debris, ensuing in the death of as a minimum 84 people and leaving many injured.
- **Madhav Gadgil**, the chairman of the **Western Ghats Ecology Expert Panel (WGEEP)**, has highlighted that the panel's report had labeled the region into three levels of ecological sensitivity, with the areas now struck by the disaster being marked as notably sensitive.
    - However, two years later, the **Kasturirangan report** had toned down the recommendations.

What is Landslide?

- Landslides are a geological phenomenon that entails the unexpected and rapid motion of a mass of rock, soil, or debris down a slope under the effect of gravity.
- Landslides, generally, arise in regions having characteristics like Steep terrain along with hilly or mountainous regions, Presence of joints and fissures or areas in which surface runoff is directed or land is closely saturated with water.

Causes of Landslides

- **Natural Causes:**
    - **Heavy Rainfall:** Heavy rainfall is one of the most common triggers of landslides. It increases pore water stress in addition to the burden of soil through making it saturated.
    - **Erosion:** Clay and flowers present inside the soil or rock act as cohesive factors and help bind debris collectively. By casting off those cohesive factors, erosion makes an area more prone to landslides.
    - **Earthquakes:** Intense floor shaking due to earthquakes causes instability in rocks and soils, therefore triggering landslides.
    - **Volcanic Eruptions:** Ash and debris deposited via volcanic eruptions overload slopes while the following seismic activity causes instability.
- **Anthropogenic Causes**
    - **Deforestation:** By maintaining soils in addition to obstructing the glide of falling debris, vegetation cowl performs an important function in stopping landslides in any vicinity. Deforestation takes away this preventive cover and increases vulnerability to landslides.
    - **Encroachment in Vulnerable Terrains:** Of past due, people were encroaching in landslide-inclined areas along with hilly terrains. This has caused increased creation activities in these regions and extended possibilities of landslides.
    - **Uncontrolled Excavation:** Unauthorized or poorly deliberate excavation sports, including mining, quarrying, and so on destabilize slopes and increase the chances of landslides.

- **Climate Change:** Climate trade due to numerous anthropogenic activities has caused abrupt alterations in precipitation styles and elevated frequency of extreme climate occasions.

Why is Kerala prone to landslides?

- Kerala is prone to heavy rains and flooding, with an anticipated 14.5 percent of land area visible as vulnerable.
- The Kerala State Disaster Management Authority (KSDMA) has recognized 1,848 square kilometers, 4.75 percent of the state's total region, as High Landslide Hazard Zone.
- The State lies in seismic region III which corresponds to Moderate Damage Risk Zone (MSK VII).

Gadgil committee recommendation

- **Ecologically Sensitive Zones:** The report encouraged classifying 64 percent of the Western Ghats into Ecologically Sensitive Zones known as ESZ 1, ESZ 2 and ESZ three.
  - It also recommended designating the whole place as an **Ecologically Sensitive Area (ESA)**.
  - Almost all developmental activities like mining, construction of thermal energy flowers, and dams were to forestall in conjunction with the decommissioning of similar initiatives which have completed their shelf life in ESZ 1.
  - Bottom-to-top method in governance of the environment, indicating decentralization and more powers to local government.
- **Western Ghats Ecology Authority:** Under the Environment (Protection) Act, 1986, a professional body to control the ecology of the area and to ensure its sustainable development was advocated through the committee.
- **Ban on growing single business plants:** Crops like tea, coffee, cardamom, rubber, banana and pineapple, which have led to "fragmentation of forest, soil erosion, degradation of river ecosystems and toxic infection of the environment" need to be curtailed.
- **Community participation:** The panel had urged the Ministry of Environment and Forests to take crucial steps to contain residents, including proactive and sympathetic implementation of the provisions of the Community Forest Resources of the Forest Rights Act.

Measures taken in India

- The Disaster Management Act, of 2005 offers a comprehensive felony and institutional framework for the management of various screw ups consisting of landslides.
- The National Landslide Risk Management Strategy (2019) covers all aspects of landslide disaster chance discount and management, along with danger mapping, monitoring, and early caution structures.
- The National Disaster Management Authority (NDMA) has issued Guidelines on Landslide Hazard Management (2009) that define the steps that have to be taken to reduce the danger of landslides.
- The National Institute of Disaster Management (NIDM) has been supplying ability building and different help to various national and nation-level disaster control authorities.
- **Early Warning system:** Efforts were made closer to higher prediction of climate. E.g. Ensemble Prediction System. This will assist expect disasters like landslides.

Source: ***The Hindu***

Mains PYQ

1. ***Differentiate the causes of landslides in the Himalayan region and Western Ghats. (2021)***

- Ecologist Madhav Gadgil, has stated that the disaster in Wayanad is a man-made tragedy, attributing it to the Kerala government's failure to implement crucial ecological recommendations.
- Massive landslides at Mundakkai, Chooralmala, Attamala, and Noolpuzha in Wayanad district buried large areas under debris, ensuing in the death of as a minimum 84 people and leaving many injured.
- **Madhav Gadgil**, the chairman of the **Western Ghats Ecology Expert Panel (WGEEP)**, has highlighted that the panel's report had labeled the region into three levels of ecological sensitivity, with the areas now struck by the disaster being marked as notably sensitive.
    - However, two years later, the **Kasturirangan report** had toned down the recommendations.

[2.35] India's Steel Production To Surpass 300 Million Tonnes By 2030

Syllabus - Economy [GS Paper-3]

Context

Steel production in India, driven by strong demand for government infrastructure projects, is projected to surpass 300 million tonnes (MT) by 2030.

About

- India currently ranks as the World's 2nd Largest Producer of Crude Steel, surpassing Japan in 2018.
- Current metal demand remains strong with an infrastructure push from the government and expects a growth of about 10 percent.
- The steel industry stands as one of the largest giant pillars of India's monetary and industrial framework.

Importance

- **Growth:** The steel industry contributes substantially to the country's GDP and serves as a primary source of employment.
    - Directly employing millions and supporting many more indirectly, it provides jobs across a range of skills, from high-tech engineering roles to manual labour.
- **Infrastructure Development:** The creation of bridges, highways, railways, and homes relies closely on steel because of its strength, sturdiness, and versatility.
- **Industrial Expansion and Technological Advancements:** India's steel industry is characterised by its constant efforts to beautify production performance, lessen costs, and develop high-quality steel products.
    - The industry additionally supports the growth of different high-tech sectors, which include vehicles, aerospace, and defense.
- **Collaboration with international companions:** India's steel industry has a large presence in global trade, contributing to the country's export sales.

- By taking part in international markets, India complements its economy and has an effect on and establishes itself as a key player in international steel manufacturing.

- **Strategic Importance:** Steel is critical for the manufacturing of defense equipment, infrastructure critical to national security, and emergency reaction capabilities.

Challenges

- **Raw cloth availability:** There is volatility within the supply and pricing of raw substances, especially iron ore and coal.
    - The inefficiencies in logistics growth operational costs and affect the competitiveness of Indian steel producers inside the international market.
- **Competition :** India remained a net importer of steel during the first, second and third sectors of FY24 because of price differentials between international and domestic prices of finished steel.
- **Environmental concerns:** Steel manufacturing is energy-extensive and generates substantial greenhouse gas emissions
- India's steel sector debts for 12% of India's greenhouse gas emissions with an emission intensity of 2.5 tonnes of CO2 consistent with tonne of crude steel in comparison to the international average of 1.9 tonnes of CO2 in line with tonne of crude metal

Initiatives

- The Union Minister of Steel and Heavy Industries launched SIMS 2.0 portal, the upgraded Steel Import Monitoring System, to offer actionable intelligence to stakeholders for effective selection-making and strategic making plans.
- **National Steel Policy 2017 (NSP 2017):** India aims to achieve a crude steel capability of 300 MTPA and a crude steel call for/manufacturing of 255 MTPA by 2030-31.
- **Productivity Linked Incentive (PLI) Scheme:** 57 MoUs with 27 corporations were signed under the PLI Scheme.
- **'Brand India' Labeling:** The Ministry of Steel is selling a "Made in India" brand for home steel.
- **PM Gati Shakti National Plan:** The Ministry of Steel has recognized 22 essential infrastructure gaps and is coordinating with other ministries (Road Transport and Highways, Railways, Ports, Shipping, and Waterways) to address them.
    - The Union Budget for 2024-25 gives India's steel industry several motives to cheer, along with import obligation cuts on numerous raw materials and oblique advantages from extended spending on infrastructure and low-priced housing.

Conclusion and Way Forward

- The steel industry in India demands coordinated efforts and strategic planning to triumph over. From raw material supply and environmental policies to global competition and technological advancements, addressing those troubles is essential for ensuring the world's persevered grand sustainability.
- By embracing innovation, enhancing infrastructure, and navigating regulatory landscapes effectively, India's steel industry can continue to play a vital role in the nation's monetary and industrial development.
- Economic Survey 2023-24 highlighted green metal's essential position amidst global climate challenges.
- Green metal will play a critical function in reshaping the future of the industry as the arena actions towards a low-carbon economy.

***Source:* The Hindu**

Mains PYQ

1. ***Account for the present location of iron and steel industries away from the source of raw material, by giving examples. (2020)***

- Steel production in India, driven by strong demand for government infrastructure projects, is projected to surpass 300 million tonnes (MT) by 2030.
- India currently ranks as the World's 2nd Largest Producer of Crude Steel, surpassing Japan in 2018.
- Current metal demand remains strong with an infrastructure push from the government and expects a growth of about 10 percent.
- The steel industry stands as one of the largest giant pillars of India's monetary and industrial framework.

[2.36] Project Tiger to displace 5.5 lakh Tribals

Syllabus - Environment [GS Paper-3]

Context

Project Tiger is expected to displace at least 550,000 Scheduled Tribes and other forest dwellers.

About

- India has made significant strides in protecting its national animal, the Bengal tiger , through projects like Project Tiger which changed into released in 1973 as a Centrally Sponsored Scheme in 9 reserves of different States (Assam, Bihar, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Uttar Pradesh and West Bengal) .
    - The project focuses on the selection and preservation of regions which are especially managed to conserve the tiger population and their associated ecosystems
- Project Tiger has positioned the endangered wild tigers of India on an assured course of recovery and has finished 50 years of a hit implementation.
- India's Project Tiger has made incredible development in tiger conservation during the last 5 years.

Impact on tribes

- **Displacement:** the established order of tiger reserves frequently leads to the displacement of local communities.
    - Since 2021, displacement has considerably accelerated, with an average of 48,333 people displaced from each reserve, a 967% rise in comparison to pre-2021 figures.
- **Loss of Livelihood:** When tribal communities are uprooted from their ancestral lands, they lose their livelihoods.
    - Traditional practices like looking, fishing, and amassing meals emerge as not possible.
    - Victims face extreme human rights abuses consisting of more-judicial killings, enforced disappearances, torture, and different forms of violence.
- **Cultural Disruption:** Displacement disrupts cultural practices, access to sacred sites, and burial grounds. Indigenous understanding about forests and wildlife is likewise lost.
- **Lack of Consent:** the lack of free, prior, and informed consent from affected communities earlier than designating areas as tiger reserves.

- Consent is only in demand displacement, not before.

Recent Recommendations

- Policies should prioritize coexistence rather than displacement. Involving local communities in conservation efforts can cause better effects.
- Seek consent from affected communities earlier than designating an area as a tiger reserve.
- Provide alternative livelihood options to displaced families.
- Striking a balance between tiger protection and human well-being is vital.

Conclusion and Way Forward

- India's tiger conservation policy needs to evolve to defend both tigers and the folks that share their habitat.
- By addressing displacement, respecting indigenous rights, and fostering community participation, we are able to obtain a harmonious coexistence between humans and wildlife.
- For instance ,In Biligiri Rangaswamy Temple Tiger Reserve (Karnataka),The Soliga tribal rights coexist with tigers, with the tiger population growing considerably from 35 to 68 between 2010 and 2014.

Source: ***The Hindu***

Prelims PYQ

1. Consider the following areas:(2012)

1. **Bandipur**
2. **Bhitarkanika**
3. **Manas**
4. **Sunderbans**

Which of the above are Tiger Reserves?

a. 1 and 2 only

b. 1, 3 and 4 only correct

c. 2, 3 and 4 only

d. l, 2, 3 and 4

Ans c)

- Project Tiger is expected to displace at least 550,000 Scheduled Tribes and other forest dwellers.
- India has made significant strides in protecting its national animal, the Bengal tiger , through projects like Project Tiger which changed into released in 1973 as a Centrally Sponsored Scheme in 9 reserves of different States (Assam, Bihar, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Uttar Pradesh and West Bengal) .
    - The project focuses on the selection and preservation of regions which are especially managed to conserve the tiger population and their associated ecosystems
- Project Tiger has positioned the endangered wild tigers of India on an assured course of recovery and has finished 50 years of a hit implementation.
- India's Project Tiger has made incredible development in tiger conservation during the last 5 years.

[2.37] Report on Currency and Finance (RCF) for 2023-24

Syllabus - Economy [GS Paper-3]

Context

In the **Report on Currency and Finance (RCF) for 2023-24**, the RBI stated that digitalisation-induced changes in the behaviour of consumers and financial intermediaries can have implications for monetary policy.

About

- India's digital bills marketplace is one of the quickest-developing within the international.
- As of 2023, the market size is expected to be around $3 trillion, reflecting a compound annual growth rate (CAGR) of about 27% from 2018.
- **Growth Enablers:** The surge in digital payment adoption can be attributed to various projects and reforms added through the authorities and the non-public quarter.
    - The **Unified Payments Interface (UPI)**, a real-time payment system developed via the **National Payments Corporation of India (NPCI)**, has been a game-changer.
    - The UPI has seen a tenfold growth in extent over the past 4 years, increasing from 12.5 billion transactions in 2019-20 to 131 billion transactions in 2023-24 – 80 percent of all digital payment volumes.
    - Other digital payment modes including mobile wallets, net banking, and card payments are also contributing significantly to this growth.
- **Significance:** Digitalisation can offer a strong enhancement to India's external trade in goods and services.
    - Digitalisation in international payment systems has the potential to lessen the value of receiving remittances, thereby leading to better remittances and income or financial savings for the recipients.

Concerns

- Digitalisation growth concerns related to impulsive spending, herd behaviour and data safety.
- Digital systems permit brief dissemination of financial trends and choices, allowing statistics about investments, spending habits, and financial products to spread swiftly throughout social networks.
- When customers take a look at big agencies carrying out certain economic activities, consisting of mass shopping for or selling of shares during a marketplace frenzy, they may be much more likely to observe the crowd.
- Similarly, pushed with the aid of herd behaviour, depositors may additionally withdraw their cash from banks, leading to potential bank runs or failures.
- The average payment of records breaches in India stood at $2.18 million in 2023, a 28 percent increase since 2020.
- The most common attacks in India are phishing (22 percent), accompanied by stolen or compromised credentials (16 percent).
- Digitalisation can impact inflation and output dynamics, and financial policy transmission in numerous manners and the general effect ought to vary over time given the quick pace of trends.

Way Ahead

- The RBI has been mission proactive policy measures to harness the blessings of digitalisation while mitigating the rising risks of digitisation within the economic sector.

- The move-border digital alternate guidelines could play a crucial position in harnessing new opportunities, constructing trust, and facilitating coordination on regulatory components like statistics security and cybersecurity.
- The internationalisation of the rupee is also progressing backed through a complete and incorporated policy approach.

Source: ***The Indian Express***

Mains PYQ

1. ***Implementation of Information and Communication Technology (ICT) based Projects/Programmes usually suffers in terms of certain vital factors. Identify these factors, and suggest measures for their effective implementation. (2019)***

- In the **Report on Currency and Finance (RCF) for 2023-24**, the RBI stated that digitalisation-induced changes in the behaviour of consumers and financial intermediaries can have implications for monetary policy.
- India's digital bills marketplace is one of the quickest-developing within the international.
- As of 2023, the market size is expected to be around $3 trillion, reflecting a compound annual growth rate (CAGR) of about 27% from 2018.
- **Growth Enablers:** The surge in digital payment adoption can be attributed to various projects and reforms added through the authorities and the non-public quarter.
    - The **Unified Payments Interface** **(UPI)**, a real-time payment system developed via the **National Payments Corporation of India** **(NPCI)**, has been a game-changer.
    - The UPI has seen a tenfold growth in extent over the past 4 years, increasing from 12.5 billion transactions in 2019-20 to 131 billion transactions in 2023-24 – 80 percent of all digital payment volumes.
    - Other digital payment modes including mobile wallets, net banking, and card payments are also contributing significantly to this growth.

[2.38] Prohibition of Unlawful Conversion of Religion (Amendment) Bill, 2024

Syllabus - Polity [GS Paper-2]

Context

Recently the Uttar Pradesh Government has presented the **Prohibition of Unlawful Conversion of Religion (Amendment) Bill, 2024** in order to make anti-conversion law more stringent.

About

- The law prohibits the religious conversion of someone by using "misrepresentation, force, undue influence, coercion, allurement or through any fraudulent method".
    - Conversion by solemnization of marriage or relationship might additionally qualify as illegal conversion underneath the Act.
- Any aggrieved individual or their family can lodge an FIR for illegal conversion.
- **Punishment:** The fashionable punishment is 1-5 years imprisonment, and a fine of at least Rs. 15,000.

- If the victim is a woman, a minor or an individual belonging to a Scheduled Caste or Scheduled Tribe, the punishment will increase to 2-10 years with a fine of at least Rs. 25,000.
- In instances of mass conversion, the punishment will become 3-10 years, and a fine of at least Rs. 50,000.

- **Process for Conversion:** This requires the individual converting to submit two declarations to the District Magistrate.
  - The first assertion has to include a declaration that the character choices to convert their religion without any force, coercion, undue impact, or allurement.
  - The Magistrate will then ensure that a police enquiry is conducted to decide the "actual purpose" of the non secular conversion.
  - The second declaration will include private, non secular info and the information of the conversion ceremony.
  - After the second declaration is submitted, the District Magistrate will submit a duplicate of it to the notice board, for the public to record objections to the conversion, if any.

Key Amendments Proposed

- Increasing the maximum punishment from 10 years to life imprisonment; widening the ambit to allow any individual to report a complaint; making bail more tough — those are most of the key modifications proposed.

Arguments Against the Law

- **Constitutional Concerns:** The law violates essential rights assured by the Indian Constitution, consisting of the right to freedom of religion and the right to privacy.
  - The state does not have the authority to regulate an individual's choice of religion.
- **Ambiguity in Definitions:** The Act has been criticized for its vague and ambiguous definitions of phrases including "coercion," "fraud," and "allurement," that can result in arbitrary interpretation and misuse by law enforcement agencies.
- **Impact on interfaith Relationships:** The law could be misused to target interfaith couples, in particular the ones regarding Hindu-Muslim relationships, by accusing one party of changing the other through coercion or fraud.
- **Burden of Proof:** The Act places the burden of evidence at the accused, requiring them to prove that conversion was not achieved through coercion, fraud, or allurement.
  - This reversal of burden of proof is seen as unfair and towards the principles of natural justice.
- **Social Polarization:** The enactment of such legal guidelines has the capacity to exacerbate social tensions and polarize groups along religious traces, leading to extended communal disharmony.

Arguments in Favour of the Law

- **Prevention of Forced Conversions:** The primary objective of the Act is to prevent forced conversions carried out through coercion, fraud, or allurement.
  - Such conversions often make the most susceptible individuals, especially women and members of marginalized groups, and the law is vital to protect their rights and autonomy.
- **Preservation of Social Harmony:** Regulating religious conversions enables to keep social harmony and prevent tensions between different religious communities.
- **Deterrence Against Conversion Rackets:** The Act serves as a deterrent towards conversion rackets and fraudulent non secular groups that take advantage of individuals for monetary or different profits.

- **Promotion of Religious Freedom with Responsibility:** The Act is viewed as a balanced approach to safeguarding non secular freedom whilst stopping abuses and ensuring that conversions are performed ethically and transparently.
- **Backing from Public Opinion:** The enactment of the law reflects the emotions and concerns of a considerable portion of the population in Uttar Pradesh, in which problems related to religious conversions were contentious.

Way Ahead

- Despite those challenges and criticisms, the Uttar Pradesh government has defended the law, arguing that it's essential to prevent forced conversions and shield the rights of individuals to exercise their religion freely.
- The ultimate resolution of these challenges might also rely on judicial interpretation and capacity amendments to the Act.

Source: ***The Hindu***

Mains Practice Question

1. ***Discuss the socio-political implications of anti-conversion laws on religious minorities in India. How do these laws ensure communal harmony and individual freedoms?(250 words)***

- Recently the Uttar Pradesh Government has presented the **Prohibition of Unlawful Conversion of Religion (Amendment) Bill, 2024** in order to make anti-conversion law more stringent.
- The law prohibits the religious conversion of someone by using "misrepresentation, force, undue influence, coercion, allurement or through any fraudulent method".
    - Conversion by solemnization of marriage or relationship might additionally qualify as illegal conversion underneath the Act.
- Any aggrieved individual or their family can lodge an FIR for illegal conversion.
- **Punishment:** The fashionable punishment is 1-5 years imprisonment, and a fine of at least Rs. 15,000.
    - If the victim is a woman, a minor or an individual belonging to a Scheduled Caste or Scheduled Tribe, the punishment will increase to 2-10 years with a fine of at least Rs. 25,000.
    - In instances of mass conversion, the punishment will become 3-10 years, and a fine of at least Rs. 50,000.
- **Process for Conversion:** This requires the individual converting to submit two declarations to the District Magistrate.
    - The first assertion has to include a declaration that the character choices to convert their religion without any force, coercion, undue impact, or allurement.
    - The Magistrate will then ensure that a police enquiry is conducted to decide the "actual purpose" of the non secular conversion.
    - The second declaration will include private, non secular info and the information of the conversion ceremony.
    - After the second declaration is submitted, the District Magistrate will submit a duplicate of it to the notice board, for the public to record objections to the conversion, if any.

[2.39] India is the World's Second-Largest Aluminium Producer

Syllabus: Indian Economy [GS Paper-3]

Context

India has established itself as the second-largest producer of aluminium in the world, a position that underscores its growing significance in the global mineral industry. This achievement is not only a testament to India's rich mineral resources but also reflects the robust demand from various sectors, including construction, automotive, and energy.

Overview of Aluminium Production in India

- **Global Context: Aluminium is a critical metal used in various applications, from packaging to construction and transportation.**
    - **India has emerged as a key player in the global aluminium market, producing approximately 4.1 million tonnes of primary aluminium in 2023, which accounted for about 6% of the global production.**
    - **This positions India as the second-largest producer, following China, and highlights its significant role in the international aluminium supply chain.**
- **Key Players in the Industry: The Indian aluminium sector is dominated by major companies such as Vedanta, Hindalco, and National Aluminium Company (NALCO).**
    - **These companies have invested heavily in technology and infrastructure to enhance production efficiency and meet the rising domestic and international demand for aluminium.**
    - **The production process in India is primarily coal-powered, which has implications for both energy consumption and environmental impact.**

Recent Production Trends

- **Record Production in FY 2023-24: The fiscal year 2023-24 marked a significant milestone for India's mineral production, with aluminium production witnessing a notable increase. The total primary aluminium output reached 4.1 million tonnes, reflecting a 1.2% growth compared to the previous year. This growth trend continued into the first quarter of FY 2024-25, where production rose to 10.43 lakh tonnes, up from 10.28 lakh tonnes in the same period the previous year.**
- **Sectoral Demand and Economic Implications: The increase in aluminium production is closely tied to the robust demand from various sectors:**
    - **Construction and Infrastructure:** The ongoing infrastructure projects in India have led to a surge in demand for aluminium, which is favored for its lightweight and corrosion-resistant properties.
    - **Automotive Industry:** The automotive sector is increasingly adopting aluminium to enhance fuel efficiency and reduce emissions, further driving demand.
    - **Energy Sector:** Aluminium is essential in electrical transmission and renewable energy applications, contributing to its growing consumption in the energy sector.

Projected Growth in Aluminium Consumption

- India's per capita aluminium consumption was recorded at 3.1 kg in 2023, with expectations to double by 2033.
- This anticipated growth in consumption is driven by increasing urbanization, infrastructure development, and the push for sustainable materials in various industries.
- Projections suggest that aluminium demand could rise to 9 million tonnes by 2033, reflecting a significant shift in consumption patterns.

Challenges and Opportunities

While the outlook for aluminium production in India is promising, several challenges must be addressed:

- **Environmental Concerns:** The coal-powered nature of aluminium production raises environmental issues, necessitating a shift towards cleaner energy sources to mitigate the carbon footprint.
- **Global Competition:** India must navigate a competitive global landscape, particularly from countries with lower production costs and more efficient technologies.
- **Investment in Technology:** Continued investment in advanced technologies and sustainable practices will be crucial for maintaining India's competitive edge in the aluminium market.

Government Initiatives

- The Indian government has recognized the importance of the minerals sector in economic development and has implemented various initiatives to support growth.
- Policies aimed at enhancing mining efficiency, promoting sustainable practices, and attracting foreign investment are essential for the long-term sustainability of the aluminium industry in India.

Conclusion

India's position as the second-largest aluminium producer in the world is a significant achievement that highlights its potential in the global mineral market. The continued growth in production, driven by robust demand across various sectors, positions India favorably for future economic development. However, addressing environmental challenges and enhancing production efficiency will be critical to sustaining this growth trajectory. As the country moves forward, the aluminium sector is poised to play a vital role in India's industrial landscape, contributing to economic resilience and development.

Source: PIB

UPSC Mains Practice Question

Q. Discuss the factors contributing to India becoming the world's second-largest aluminium producer. How does this position impact India's industrial growth and global economic positioning? What are the challenges and opportunities associated with sustaining and expanding this status?

[2.40] Disaster Management (Amendment) Bill, 2024

Syllabus: Governance [GS Paper-2]

Context

The Indian government introduced the Disaster Management (Amendment) Bill, 2024, in the Lok Sabha on August 1, 2024. This legislative initiative aims to enhance the framework for disaster management in India, reflecting the lessons learned from past disasters and the need for a more coordinated approach among various authorities involved in disaster response and management.

Introduction to the Disaster Management (Amendment) Bill, 2024

- The Disaster Management (Amendment) Bill, 2024 seeks to amend the original Disaster Management Act of 2005, which was established to create a comprehensive framework for disaster management in India.
- The bill introduces several amendments aimed at improving the efficiency and effectiveness of disaster management authorities at both the national and state levels.

Background of the Bill

- The Disaster Management Act, 2005 was enacted to ensure a systematic approach to disaster management, encompassing preparedness, response, recovery, and mitigation.
- Over the years, the government has recognized the need to update this framework to address emerging challenges, particularly in the context of climate change and increasing disaster risks.
- The amendments proposed in the 2024 Bill are based on consultations with various stakeholders, including state governments and disaster management experts.

Key Features of the Bill

- **Creation of a National and State Disaster Database: One of the significant provisions of the Disaster Management (Amendment) Bill, 2024, is the establishment of a comprehensive disaster database at both national and state levels. This database will include critical information such as:**
    - **Disaster assessments:** Evaluations of the impact and severity of disasters.
    - **Fund allocation details:** Information on financial resources allocated for disaster management.
    - **Preparedness and mitigation plans:** Strategies developed to prepare for and mitigate the effects of disasters.
    - **Risk registers:** Documentation of potential risks categorized by type and severity.
- **Empowerment of the National Disaster Management Authority (NDMA): The bill empowers the NDMA and the State Disaster Management Authorities (SDMAs) to take a more proactive role in disaster planning. Key changes include:**
    - **Preparation of disaster plans:** The NDMA will now be responsible for formulating disaster management plans at the national level, while SDMAs will do so at the state level. This replaces the previous system where the National Executive Committee and State Executive Committees were responsible for these tasks.
    - **Periodic risk assessments:** The NDMA will conduct regular assessments of disaster risks, including emerging threats from climate change and other factors that could lead to future disasters.
- **Establishment of Urban Disaster Management Authorities:** The bill proposes the creation of Urban Disaster Management Authorities for state capitals and large cities with municipal corporations. This initiative recognizes the unique challenges urban areas face during disasters and aims to enhance the capacity of local governments to respond effectively.
- **Statutory Status for Pre-Act Organizations:** The amendments also seek to provide statutory recognition to several organizations that were established before the original Act. This includes the National Crisis Management Committee and the High-Level Committee, which play crucial roles in coordinating disaster response efforts.
- **Introduction of State Disaster Response Forces:** The bill mandates the establishment of State Disaster Response Forces (SDRF) by state governments. These forces will be trained and equipped to respond swiftly to disasters, ensuring a more organized and effective response at the state level.

Objectives of the Amendment Bill

The primary objectives of the Disaster Management (Amendment) Bill, 2024, include:

- **Enhancing coordination:** The bill aims to bring clarity and convergence in the roles of various authorities and committees involved in disaster management, ensuring a more cohesive response to disasters.
- **Mainstreaming disaster management:** The amendments seek to integrate disaster management into development planning, aligning with the recommendations of the 15th Finance Commission.
- **Improving preparedness and resilience:** By establishing a robust framework for disaster risk reduction, the bill aims to enhance the preparedness and resilience of communities and infrastructure against disasters.
- **Empowering local authorities:** The creation of Urban Disaster Management Authorities and State Disaster Response Forces empowers local governments to take charge of disaster management in their jurisdictions.

Implications of the Bill

- **Strengthening Disaster Management Framework: The Disaster Management (Amendment) Bill, 2024, is poised to strengthen India's disaster management framework significantly. By empowering the NDMA and SDMAs, the bill ensures that disaster management is approached with a more structured and systematic methodology.**
- **Addressing Emerging Risks: With the increasing frequency and intensity of disasters due to climate change, the bill's focus on assessing emerging risks is particularly relevant. By identifying potential threats, authorities can take preemptive measures to mitigate the impact of disasters.**
- **Enhancing Accountability and Transparency: The establishment of a national and state disaster database will enhance accountability and transparency in disaster management. Stakeholders will have access to vital information, enabling better planning and resource allocation.**
- **Localized Response Capabilities: The creation of Urban Disaster Management Authorities and State Disaster Response Forces will enhance localized response capabilities. This is crucial in urban areas where the impact of disasters can be severe, and swift responses are necessary to save lives and property.**

Conclusion

The introduction of the Disaster Management (Amendment) Bill, 2024, marks a significant step forward in enhancing India's disaster management capabilities. By addressing the shortcomings of the original Act and introducing new provisions that reflect the contemporary challenges of disaster management, the bill aims to create a more resilient and prepared nation. As India continues to face the realities of climate change and increasing disaster risks, the effective implementation of this bill will be critical in safeguarding communities and ensuring a coordinated response to disasters.

Source: The Hindu

UPSC Mains Practice Question

Q. Critically analyze the key provisions of the Disaster Management (Amendment) Bill, 2024. How do these amendments address the current challenges in disaster management in India? Discuss the potential impacts on disaster preparedness, response, and resilience at both the national and local levels.

[2.41] Centre reissues draft on Western Ghats ESAs

Syllabus: Environment and Ecology [GS Paper-3]

Context

The Indian government has reissued a draft notification proposing to declare over 56,800 square kilometers of the Western Ghats across six states as Ecologically Sensitive Areas (ESAs). This move comes in the wake of recent devastating landslides in Kerala's Wayanad district, which has highlighted the fragility of the Western Ghats ecosystem.

Background

- The Western Ghats, a UNESCO World Heritage Site and one of the eight 'hottest hotspots' of biological diversity in the world, have been the subject of intense debate regarding their conservation and development. In 2011, the Madhav Gadgil committee recommended that 64% of the Western Ghats be designated as eco-sensitive areas, while the Dr. Kasturirangan committee in 2013 reduced this to 37%.
- The process of earmarking ecologically sensitive areas (ESAs) in the Western Ghats has been pending since August 2011, when a central panel, headed by ecologist Madhav Gadgil, recommended that the government take it up on priority to save the fragile terrain in six states: Maharashtra, Tamil Nadu, Goa, Kerala, Karnataka and Gujarat.

Key Features of the Draft Notification

The draft notification, issued on July 31, 2024, proposes to declare the following areas as ESAs:

- 449 sq km in Gujarat
- 17,340 sq km in Maharashtra
- 1,461 sq km in Goa
- 20,668 sq km in Karnataka
- 6,914 sq km in Tamil Nadu
- 9,993.7 sq km in Kerala, including 13 villages in Wayanad district that were hit by recent landslides

The notification seeks to prohibit or regulate certain environmentally hazardous human activities within these ecologically sensitive areas. Key provisions include:

- Complete ban on mining, quarrying, sand mining and high polluting industries
- Phasing out of existing mines within five years from the date of issue of the final notification or on the expiry of existing mining lease, whichever is earlier
- Ban on setting up of any new thermal power projects and expansion of existing power plants
- Prohibition of construction projects of 20,000 sq m and above, and all new and expansion of townships, and development projects with an area of 50 hectares and above or with built up area of 1.5 lakh sq m and above

The draft also proposes regulation of hydropower projects, essential services and low-polluting industries. Importantly, it specifies that agriculture, plantation and less polluting activities will not be affected due to the ESA provisions.

Objectives and Implications

- The reissued draft notification aims to enhance the protection of the Western Ghats ecosystem, which is under threat from various developmental activities. By declaring these areas as ESAs, the government seeks to strike a balance between conservation and sustainable development.

- The notification has significant implications for the six states involved, as it will restrict certain activities and projects within the designated ESAs. This has led to objections from some states, particularly regarding the inclusion or exclusion of certain areas within their jurisdictions.

Conclusion

The reissued draft notification on ecologically sensitive areas in the Western Ghats is a significant step towards the conservation of this fragile ecosystem. However, the success of this initiative will depend on the government's ability to address the concerns of the states and build a consensus on the way forward. The implementation of the final notification will require a coordinated effort among the central government, state governments, and local communities to ensure the protection of the Western Ghats while allowing for sustainable development.

Source: TOI

UPSC Mains Practice Question

Q. Evaluate the significance of the reissued draft notification on Ecologically Sensitive Areas (ESAs) in the Western Ghats. How does it aim to balance environmental conservation with developmental needs? Discuss the potential impacts on biodiversity, local communities, and sustainable development.

[2.42] SC upholds Tamil Nadu's Arunthathiyar Quota Law

Syllabus: Governance [GS Paper-2]

Context

On August 1, 2024, the Supreme Court of India upheld the constitutional validity of the Tamil Nadu Arunthathiyar Reservation Act, 2009, which provides preferential treatment to the Arunthathiyar community within the Scheduled Castes (SC) category. This landmark judgment has significant implications for social justice and reservation policies in India, particularly in Tamil Nadu, where caste dynamics play a crucial role in politics and governance.

Background of the Arunthathiyar Reservation Act

- The Arunthathiyar Reservation Act was enacted by the Tamil Nadu State Legislature to address the social and educational backwardness of the Arunthathiyar community, which is classified under the Scheduled Castes.
- The Act reserves 16% of the seats allocated for SCs in educational institutions and government jobs specifically for Arunthathiyars.
- This reservation aims to uplift a community that has historically faced marginalization and underrepresentation in various sectors.
- The Act defines the Arunthathiyar community to include several castes recognized under the SC category, such as Arunthathiyar, Chakkiliyan, Madari, Madiga, Pagadi, Thoti, and Adi Andhra.
- The introduction of this reservation was a response to sustained demands from the Arunthathiyar community for greater representation and opportunities in education and employment.

Supreme Court's Judgement

- The Supreme Court's decision was delivered by a seven-judge bench, led by Chief Justice D.Y. Chandrachud, with a majority ruling of 6:1.
- The court affirmed that sub-categorization within the SCs is a constitutional necessity to achieve substantive equality.
- The judgment emphasized that the principle of sub-classification is applicable when the social positions of different castes or groups within the SC category are not comparable.
- The court's ruling addressed the critical question of whether states have the authority to sub-classify Scheduled Castes based on their social and educational status.
- The judgment recognized that such classification is essential for ensuring that the benefits of reservation reach the most marginalized groups within the SC category.

Social Justice and Equity

- The Supreme Court's ruling is seen as a significant step towards achieving social justice and equity for the Arunthathiyar community.
- By upholding the reservation law, the court has reinforced the notion that affirmative action is necessary to address historical injustices faced by marginalized communities.
- This decision is expected to empower the Arunthathiyars and provide them with better access to education and employment opportunities.

Challenges Ahead

- While the Supreme Court's ruling is a victory for the Arunthathiyar community, challenges remain in the implementation of the reservation policy.
- The state government must ensure that the benefits of the reservation reach the intended beneficiaries and that the community is adequately represented in educational institutions and government jobs.
- Moreover, the ruling may face challenges from other SC communities that may feel disadvantaged by the sub-classification.
- It will be crucial for the Tamil Nadu government to manage these dynamics carefully to maintain social harmony and ensure that the reservation policy is effective in achieving its intended goals.

Conclusion

The Supreme Court's upholding of the Tamil Nadu Arunthathiyar Reservation Act, 2009, marks a pivotal moment in the ongoing discourse on caste-based reservations in India. By recognizing the need for sub-categorization within the Scheduled Castes, the court has reinforced the principles of social justice and equity. This ruling not only benefits the Arunthathiyar community but also sets a precedent for similar initiatives across the country.

As Tamil Nadu navigates the complexities of caste dynamics and reservation policies, the government must remain committed to ensuring that the benefits of affirmative action reach the most marginalised communities. The successful implementation of the Arunthathiyar quota law will be essential in fostering social upliftment and promoting inclusive development in the state.

Source: **The Hindu**

UPSC Prelims Practice Question

Q. Which of the following statements regarding the Tamil Nadu Arunthathiyar Reservation Act, 2009 is/are correct?

1. **The Act provides 16% reservation for the Arunthathiyar community within the 18% quota for Scheduled Castes in educational institutions and government jobs in TamilNadu.**
2. **The Arunthathiyar community includes castes such as Arunthathiyar, Chakkiliyan, Madari, Madiga, Pagadi, Thoti, and Adi Andhra.**
3. **The Supreme Court upheld the constitutional validity of the Act in a 5:2 majority judgement.**
4. **The Act was introduced by the DMK government led by Chief Minister M. Karunanidhi in 2009.**

Select the correct answer using the codes given below:

a) 1, 2 and 3 only

b) 1, 2 and 4 only

c) 2, 3 and 4 only

d) 1, 2, 3 and 4

Answer: B