

MONTHLY

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*Supplementary reading material for MGP and Current Affairs classes
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PREPARATION

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The Ninth Edition

Dear Forumites,

What you are about to read is the ninth edition (January 2021 edition) of EPIC! Magazine. This new year brings both challenges and opportunities. With the rollout of the vaccines, we can expect the resumption of regular exam cycle. At the same time, the renewed timetable by UPSC, has cut short the duration between Prelims 2021 and Mains 2021. Therefore, the challenge here is to prepare for the mains examination well in advance during the present transition period. Therefore, one must not let one's guard down, this goes for all aspirants who have given Mains 2020 and preparing for the interviews as well as those preparing for 2021. For strengthening our defenses and maximizing our opportunities, the two-part format of EPIC! i.e. the Mains Magazine and the Factly, provides a segregated yet complete coverage of current affairs for civil services preparations

Aggregating the various view points from our 9PM and 7PM initiatives, this edition contains interesting analysis of the emerging world order and how India's foreign policy has evolved to tackle the pandemic, the challenge of vaccine hesitancy, the growing criminalization of criticism etc. The Factly section contains all the relevant information/facts of current affairs required for the preliminary examination 2021.

Our community and student engagement are the source of inspiration in our relentless pursuit of simplifying civil services preparations. You can contribute to the topic list/provide your feedback by writing to us at feedback@forumias.academy.

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SHOWCASE ARTICLE

Changing World Order and India's Foreign Policy

Syllabus: International Relations

In News: The foreign policy of India is being challenged by the changing world order in present time, under the backdrop of Covid-19. This article covers Indian Foreign policy in a holistic manner covering its basis, evolution and challenges it confronts in present times.

Basis of foreign policy in India : The fundamental challenge facing Indian foreign policy is to ensure that India engages with the international community in a manner that is both consistent and responsive to contemporary realities. Therefore, our foreign policy has been a mixture of continuity and change. This mandates us to understand the determinants of our foreign policy.

Determinants of foreign policy

- **Culture** – India foreign policy is based on the culture of brotherhood, peaceful co-existence and mutual benefits and non-interference. The values of Vasudhaiva Kutumbakam (one world), pluralism and tolerance, non-violence, and an aspiration to become the champion of the countries of the global south, influences our foreign policy. The prime example of cultural influence in foreign policy is International Yoga Day.
- **History:** The bitter experience of **colonialism and imperialism** has influenced the foreign policy of India. The **Freedom struggle** and the support for freedom of oppressed people in Africa and Latin America have led the formative years of our foreign policy. Racial discrimination and colonialism had made India the **champion of de-colonization**.
- **Social structures:** **PM Nehru** mentioned that the "foreign policy is an extension of domestic policy". Social structures includes aspects of population, demography, religion, caste, ethnicity, economy. For example - India's relationship in the neighborhood and beyond with Islamic countries of West Asia. Shared ethnicity has also become source of distrust (Pakistan, Sri Lanka, Bangladesh, Nepal).
- **Geography:** **According to Napoleon Bonaparte**, "any country's foreign policy is determined by its geography". Most **permanent and stable** factor (topography, climate, location). Example - India's location in **South Asia, along with its access to the Indian Ocean** in the backyard has enabled it to be the net security provider in the region.
- **Economic:** A more integrated economy **necessitates deeper relations with countries**. High economic growth and development form the magnet which attracts both friends and enemies. It provides leverage via aid, technology transfers, and grants.
- **Leadership:** **Individual initiatives remain the most important variable** in various foreign policy, from military to business to quality of foreign policies. However, individual initiatives are **constrained by governmental and social structure. According to C. Rajamohan**, Modi's contribution to the conduct of national's external relations has been **the imagination of India as a leading power** in the international system.

- **Security:** The changing world order has made security central to the national interest. India's balancing role between US, China, and Russia can be understood in the context of the changing nature of global security architecture.

India has sought to achieve its security and socio-economic advancements while working for peace, freedom, progress, and justice to all nations and peoples. The present foreign policy can be better comprehended if we understand its evolution

Evolution of Foreign Policy

The minister of external affairs S. Jaishankar has mentioned 6 phases of the evolution of India foreign policy:

- **1947-1962: Phase of optimistic non alignment**
 - India was able to traverse the choppy waters in a bipolar world.
 - India's objective was to resist the dilution of sovereignty, enhances its leverage, and rebuilt its economy.
 - It was also able to project itself as the leader of the 3rd world especially Asia and Africa. India also became the founding member of the Non-Alignment Movement.
 - Optimistic idealism ended with the 1962 war.
- **1962-1971: Phase of realism and recovery**
 - India started looking beyond NAM.
 - It focused on National security with two back-to-back wars with China in 1962 and then Pakistan in 1965.
 - There was the intensification of the cold war with the formation of Pakistan, China and US axis.
 - There was a perceptible tilt towards USSR
- **1971-1991: Greater Indian Regional Assertion**
 - India opted for its own Monroe doctrine (regional influence using Hard and Soft power).
 - It used hard power for liberating Bangladesh and Sri Lanka against
 - India also performed its experimental Nuclear test at Pokhran as Operation Smiling Buddha
 - This phase ended with the collapse of the USSR and the dilution of the nuclear umbrella provided by the USSR.
- **1991-1999: Phase for guarding strategic autonomy**
 - This phase was characterized by the emergency of unipolar world order with a single superpower in the form of the United States.
 - India became a nuclear power after Pokhran 2 and created its own strategic space for itself.
 - It engaged in a new unexplored relationship via bilateral relations with Israel and multilateral relationship with southeast Asian countries via the look east policy
- **2000-2013: Phase of balancing power**
 - India prioritised geoeconomics over geopolitics

- It emerged as balancing power and a swing state in transitioning world order (from unipolar to multipolar)
- India realigned some of its past idealism and moved towards the strategic relationship with the USA via the Indo-US civil nuclear deal.
- There was the emergence of BRICS with the decline of the west and the rise of the rest.
- **2014 onwards: Era of energetic diplomacy**
 - India used innovative diplomacy to address the challenges of changing world order.
 - India itself emerged as a major power (political, military, economic and diplomatic) and has started asserting its perceived world order based on civilizational values.
 - It has also started shaping key global negotiations like Paris Climate Change and has also ventured into creating new institutions like CRDI, ISA etc
 - It has also redefined its foreign policy via the Neighbourhood first policy, Think West policy, and Act east policy.

Challenges presented by the current pandemic: geopolitical and geo-economical dimensions

The multifaceted nature of the present challenge requires a deeper understanding of the situation. What began as a health emergency has expanded into an economic disruption, a geopolitical shock and a social challenge of unprecedented magnitude. According to Former MEA Secretary Sujata Mehta, "How a country deals with the present crisis will define its role in the global era." It also applies for India. How New Delhi deals with this challenge and its ability to transform them to opportunities will define India's trajectory in the emerging global world order.

Changing world order before and during the pandemic:

The world order has witnessed tectonic changes before and during pandemic. It can be characterized by:

- Increasing Chinese assertiveness using its **wolf warrior diplomacy**
- The **American retrenchment**
- The emergence of **a new cold war** between USA and China
- **Weakening of Alliances** and shifting of balance of power
- The evolving relationship of Israel with Arab countries
- The growth of non-state actors as legitimate actors in politics. Ex- taliban
- The need for **reformed multilateralism**
- The failure of mechanism of **the UN led collective security**
- The rise and rise of global issues like Climate change, AI etc
- The global economic slowdown caused by **the great lockdown**
- The **weaponization of the global supply chain** by China
- The emergence of **Data as the new oil**
- The role of big tech companies like **3A - Alphabet, Apple and Amazon**

- Global Order Before Pandemic
 - There was a shift in the geopolitical theatre from trans-Atlantic to trans pacific, with all major players defining their idea of the Indo-pacific region. The south china sea and Afghanistan became the theatre of great power politics. The Middle East also experienced a flux with the realignment of the traditional Saudi led bloc and the challenge of the new axis (Turkey, Iran and Pakistan).
 - The emergence of loosely structured multipolarity. The ongoing American retrenchment, and the absence of a credible alternative for a global policeman, triggered a race towards multipolar world order.
 - Deglobalisation triggered by an upsurge of nationalist and parochial sentiments in countries across the world.
 - The parallel weakening of multilateral institutions characterized by an ineffective UN, unreformed UNSC and weakening of the Washington consensus.
- **Changing Nature of Global Politics during the Pandemic**
- **Geopolitics:**
 - China's regional and global profile has magnified during the pandemic. It has shown an alternative governance model to recover faster from the pandemic. It is the first largest economy to register a steady recovery. It has used **mask diplomacy** to reassert its significance in the global value chain. It has also steadily **narrowed the power gap with the US** by accumulating high-technology assets such as in Artificial Intelligence and 5-G telecom networks.
 - **Assertive politics:** China has shed Deng Xiaoping's policy of peaceful rise of china and used **wolf warrior diplomacy** to challenge the American supremacy during the pandemic.
 - This may be seen in the recent coercive actions in the South China Sea, the passage of a highly restrictive National Security Law in Hong Kong, virtually abandoning the One Country Two System policy granting a high degree of autonomy to the key international financial centre in Asia. The threatening military provocation against Taiwan and the numerous transgressions challenging Indian sovereignty (Galwan clashes) points to a new orientation to China's foreign policy.
 - The **collapse of the western governance system**, especially in USA, has dented the ability of the west to act as a role model for the democratic world.
 - There has been a growing need for reformed multilateralism because of the ineffective response by multilateral institutions like WHO, UN etc. Also, the UN has **failed to fix accountability** for the pandemic on China.
 - The world order presently is being characterized by weakening alliances and a **shift in the balance of power** (decline of west and rise of Asian powers).
- **Geo-economic:**

- China believes that it can **provide an alternative development path** that can be emulated by other developing countries. This is being termed as **Beijing Consensus** as an alternative to the **Washington consensus**. It is characterised by state-sponsored capitalism.
 - The ambitious **Belt and Road Initiative (BRI)** is an instrumentality through which China may spread its model using its financial and technological heft.
 - Chinese uses technological advancements to challenge the developed countries. On the other hand, it uses **debt-trap diplomacy**, the **weaponization of its global value chain** to extract concessions from the developing countries. For example – rising trade tensions between China and Australia
 - The **growing protectionism** amongst major economies has been aggravated due to the trade war and the overt dependence on basic goods (healthcare kits) exposed the inadequacies of globalization.
 - The role of big tech companies (3A – Apple, Alphabet and Amazon) in exploiting the data from developing countries and the issue of data protection has raised the concern of a new type of colonialism.
- How Realistic are Chinese Aspirations?**

 - China's GDP is destined to overtake the US. However, its per capita GDP is only a quarter of the US.
 - The world's financial and currency markets are dominated by the US and the US dollar. A state controlled Chinese currency; it is unlikely to replace the dollar as an international currency.
 - Even with global military foray by China in Djibouti, Gwadar, Hambantota, Myanmar, it is significantly behind the US. However, it is using the BRI is putting in place a worldwide infrastructure and transportation platform which could be transmuted over time into a military network. But this is no match for the American network of naval bases across the world and especially USA being a blue navy.
 - Analyst believe that the US still retains its technological lead over China which is hard to overtake.
- **Behavioural Changes**
 - **Adoption of digital technologies**; extensive spread of work-from-home (WFH), the rapid adoption of tele-education and tele-medicine and the use of teleconferencing and online meetings in place of physical gatherings.
 - Newer technologies such as Artificial Intelligence, the Internet of Things (IoT's) and the use of big data will advance faster than envisaged.
 - **Global Governance:**
 - The inadequacies of global governance architecture have been exposed due to the delay in announcing of the Pandemic, the design of the required protocol resulting in the global economic slowdown.

Indian foreign policy during the pandemic:

All crisis provides an opportunity of its own. India should position itself to benefit from the crisis domestically and internationally. One of our foreign policy priorities has been to make India the “nerve centre of global supply chains”. This is also in line with the vision of ‘Aatmanirbhar Bharat’. While we build capacities at home, we should also contribute to mitigating disruptions in global markets. India has demonstrated that it is a responsible member of the global community. Some of the initiatives taken by India are:

- **Medical Diplomacy:** India supplied large volumes of drugs like HCQ and Paracetamol to friends and consumers across the world to more than 150 countries.
- **Health Focus – First Responders:** Through initiatives such as **Operation Sagar**, **Operation Sanjeevani**, the deployment of medical Rapid Response Teams in several countries, the linking of health professionals and the pooling of health capacities, has reinforced our credentials as providers of net health security and first responders.
- **Helping Indians abroad:** More than a million Indians have returned to India through the **Vande Bharat Mission** by land, sea, and air.
- **Creating alternatives:** Through the Atmanirbhar Bharat program, India has initiated a comprehensive plan to create an alternative global supply chain moving away from Chinese dependence. The supply chain resilience initiative with Australia, Japan and India is a case of proactive diplomacy.

Our Strengths driving our foreign policy

India, being a civilizational state, its foreign policy values are based on “Vasudhaiva Kutumbakam”- the world is one. We also believe in “Nishkama Karma” that good needs to be done for its own sake.

- India has projected itself as a powerhouse in the services sectors. We look at the world as a **borderless economy** with an interlinked marketplace.
- Our economy, and therefore our material wellbeing, is plugged on to global supply chains.
- We have one of the **largest and most able Diasporas**, changing our brain drain to brain gain.
- India has been a constructive actor in developing an international system that is human-centric. We have undertaken humanitarian assistance and disaster-relief operations over a geographical area spanning from the Pacific to the Atlantic.
- India has also assisted a number of our friends and partners during the current pandemic by its **medical diplomacy**.
- India has emerged as a **net security provider** in the region and beyond.
- We have catalysed the emergence of international organisations with constructive, forward-facing agendas such as International Solar Alliance and Coalition for Disaster Resilient Infrastructure.

Various Tools to Achieve Foreign Policy Goals

- India has been at the forefront in using digital diplomacy during the current crisis. India had virtual summits with Australia and the European Union. It has also participated at the Ministerial level in BRICS, SCO and RIC meetings.
- India Neighbourhood First Policy underlines the renewed primacy to neighbouring countries to comprehensively upgrade and strengthen our relationships.
- **Look East has been upgraded from Act East to Act Far East.** Using this policy India has engaged with ASEAN countries going beyond economics. There is a new realization of strategic culture in the Indo-Pacific region based on ASEAN centrality. The policy now focuses on improvements in road, maritime and air connectivity with a special focus on connecting our north-eastern states to these countries. We have a growing dialogue through ASEAN, the East Asia Summit and ASEAN Defence Minister's Meeting (ADMM) Plus.
- In the last five years, **Think West** – our outreach to the Gulf and West Asian countries – has become an increasingly important pillar of our foreign policy. The policy of de-hyphenation, personal relationship via the hug diplomacy and economic interdependence created between India and the Gulf countries has had a spill-over effect on the strategic and political outlook for the region
- India-Africa relations have had a human face since inception but it has grown both in political and economic terms. Over two-thirds of India's Lines of Credit in the past decade have been offered to African countries.
- India-US relationship has been elevated to a **Comprehensive Global Strategic Partnership** in recent years. **Defense, security and counter-terrorism** have become important pillars of our partnership.
- The European Union is an important friend with whom we have a many-layered and vibrant relationship. The **15th India-EU Summit** held in July 2020 showcased the firm resolve and vision of the two sides towards realizing a multifaceted partnership. The commitment is ingrained in the "India EU Strategic Partnership: A Roadmap to 2025" issued after Summit.
- **India- Russia** relationship has expanded to include **non-traditional and new areas of cooperation** like energy, investments and cooperation between states. This year marks the 20th year of India Russia Strategic Partnership and 10th year of 'Special and Strategic Partnership'.
- India's stature in international arena has grown and we are acquiring new responsibilities as we join the UN Security Council for a two-year non-permanent term on January 1, 2021.

India remains a strong advocate of a multipolar world order following the path to achieve sustainable peace and prosperity is through multilateralism. However, multilateralism needs to represent the reality of the contemporary world. As mentioned by the Prime Minister that only reformed multilateralism with a reformed United Nations at its centre can meet the aspirations of humanity.

GENERAL STUDIES-1

Calculating Care Economy

Syllabus: GS I- Role of women and women's organization, population and associated issues, poverty and developmental issues, urbanization, their problems and their remedies.

Why in News?

Kamal Haasan's Makkal Needhi Maiam (MNM) party recently promised salaries for housewives as a part of the party's election manifesto. It has given rise to a public discussion on the issue of housework valuation.

Background

- The following incidents have brought the issue of valuation of Women's household activities:
 - A recently released Malayalam film, **The Great Indian Kitchen** has highlighted the hard labour of women in the kitchen.
 - **Shashi Tharoor** also said that monetising the services of women homemakers in society will enhance their power and autonomy and will lead to recognition of the value of unpaid work. He also emphasised on creating near-universal basic income.
- **National Housewives Association:** In India, the National Housewives Association, in 2010, tried to seek recognition as a trade union. But it was rejected on the ground that housework is not a trade or an industry.

Global trends on the recognition of housework

- **Male and female domains:** Market is considered as a male domain whereas home is considered as a female domain. These segregations justified husband's control over family assets.
- **The International Wages for Housework Campaign (IWFHC)** is a grassroots women's network campaigning for recognition and payment for all caring work, in the home and outside.
 - It was started in **1972 by Selma James** who first put forward the demand for wages for housework at the third National Women's Liberation Conference in Manchester, England. To demand wages was to acknowledge that housework—i.e., the unwaged labour done by women in the home was work.
- **International Feminist Collective (IFC)** launched the Wages for Housework campaign, wrote in a press release: "We don't want just to demonstrate our strength but to use it and increase it to get what we want.... We are tired of our work and of not having any time of our own."
- **Oxfam report Time to care:** *The monetary value of unpaid care work globally for women aged 15 and over is at least \$10.8 trillion annually –three times the size of the world's tech industry.*

- **Women rights on salaries:** Until 1851, Women had no right over their own earnings in or out of the home, all over the world. Their wages used to be collected by husband as it was considered his right back then.
- **Exclusion of women's income:** After civil war economic census in US, household worked were tagged as **unproductive. It also excluded earning of women engaged in income producing work.**

State of household work in India

- **Main occupation of women:** 159.85 million Women stated household work as their main occupation whereas only 5.79 men referred to it as their main occupation in the 2011 census.
- **Time devoted for domestic services:** As per Time Use in India-2019 Report, **Indian women spend 299 minutes a day on unpaid domestic services** for household members, whereas men spend just 97 minutes.
- **Economic value of services:** The economic value of services provided by women is equivalent to making \$612.8 billion annually.
- **The Married Women (Protection of Rights) Bill, 1994:** It provided that a married woman shall be authorised to have an equal share in the property of her husband. It also provided women with a right to dispose of her share in the property by way of sale, gift, debt, will or in any other manner.
- **Census of 2001:** Census 2001 which had categorised those who provide household services i.e., about **36 crore women in India as non-workers.**

Need for valuing household care activities.

- **Enhancement of skills:** Like other work, household care work demands skill, creativity, and organization.
- **Reason for declining labour force participation:** The culture to take up unpaid care activities at home by women is one of the leading causes for their declining labour force participation. (one of the lowest in the world).
- **Women lose out on opportunity of employment:** For example,
 - A study by economist Ashwani Deshpande found that the gender gap in domestic work reduced during the lockdown, but widened again when many men returned to employment.
- **Participation in democracy:** For example, A recent statement by Supreme Court chief justice that women farmers from Punjab should leave democratic protests and return home.
- **Overcoming time poverty:** Women will have the ability to choose the work they desire. After recognition, women can take either office work or housework, based on the level of income.
 - Thus, women can overcome time poverty (shortage of time available towards personal requirements such as leisure, recreational activities) and can achieve 'work-life balance'.

- **Accurate GDP calculation:** It can lead to accurate National Income Accounting and GDP calculations of our economy. 49% of women in a country of 1.3 billion people don't have their work accounted for in the annual GDP, is a massive issue.
- **Reduce Domestic violence:** For these reasons in 1991, The UN Committee on the Elimination of Discrimination Against Women, recommended measurement and quantification of domestic activities performed by women. This is to highlight the economic contribution of women which results in less domestic violence.
 - It will improve gender equality. Housework salary will provide economic freedom and help women to live with dignity.

Arguments against of paying for care work

- **Wages for housework: it would only imprison women** further within the household as-
 - Paid housework would reinforce gendered division of roles, keeping women in their traditional role of wife and mother.
 - A salary would isolate women from the community and prevent men from sharing housework.
 - A salary would legitimize their oppression.
- **The calculation of the monetary value of care work:**
 - In the **Arun Kumar Agrawal v. National Insurance Company (2010) case**, the Supreme Court acknowledged the contribution of the housewives as invaluable. The court also observed that it **cannot be computed in terms of money**.
 - Supreme Court in Rajendra Singh case, 2020 observed that the services **offered out of love cannot be calculated with money**.
- **No accountability mechanism:** In this case, the total household income will remain the same unless the husband's income is improved. There is a high chance of housework is not getting paid to their wives.
- **Adding to fiscal burden:** There are still debates on who would pay for the housework done by women and if it is to be done by the State then this will put additional fiscal burden on government finances.
- **Practical implementation is highly questionable:** Legal recognition does not always mean protection. This is evident from the equal inheritance rights to daughters were not fulfilled to the majority of women in India. Apart from that one cannot determine the leave policy, Loss of Pay if wife went to her hometown etc.
- **Reducing women's potential:** Recognising domestic work will reduce women's potential in education, talent etc. Many talented women might be forced to perform household work as it is recognised.
- **Commodification of housework:** It might lead to the commodification of housework and personal care, like that of surrogacy.
- **Consequences of the paid domestic work:** Recognising the value of unpaid domestic work is not always about fair remuneration. It may not lead to all positives;

- **Men could get more entitled:** Men paying for wives' domestic work could further enhance their sense of entitlement. It may also put an additional burden on women to perform.
- **Formalize patriarchy:** Ethically, buying domestic labour from wife will formalize the patriarchal Indian family where the position of men stems from their being "providers" in the relationship.
 - Domestic and care work is 'women's work', as they are being paid for it. This will strengthen the patriarchal mind-set and makes redistribution of the burden of unpaid work impossible. This will reinforce the gendered division of roles.
- **Legal recognition does not always mean protection:** For instance, despite legal recognition of equal inheritance rights, the majority of women are not receiving that.

The alternatives to wages for housework

- **Equal inheritance rights:** The practice of dowry can be converted into a policy to help daughters to get a share in the parental property. It would be more effective than salary for household work.
- **Strengthen existing provisions: Secondly,** rather than creating a new provision of salary for housework, we need to strengthen awareness, implementation, and utilization of other existing provisions like;
 - Right to reside in the marital home.
 - Streedhan and haq mehr.
 - Inheritance rights as daughters.
 - Free legal aid and maintenance in instances of violence and divorce.
- **Education and job opportunities: Thirdly,** women should be encouraged to reach their potential through quality education, access and opportunities of work, gender-sensitive and harassment-free workplaces.
- **Support in housework: Fourthly,** Husbands should support wives in their daily housework and should not burden their wives for the work which they can do by themselves.
- **Respecting women:** We should raise our boys to be brothers, sons, husbands, and fathers who would respect the women and will fight for their rights.

Way forward:

- **The United Nations committee on elimination of discrimination against women** suggested that there should be measurement and quantification of unpaid domestic activities of women. The calculation in GDP will highlight the actual economic contribution of women.
- **Paid domestic works** are done predominantly by women in other's houses. Thus, a **National legislation for domestic workers** containing guarantees for minimum wages, and the workers' status and rights should be enacted.
- The **demand of women domestic workers in Tamil Nadu addresses** the issue of value of housework in their demands i.e., an hourly minimum wage, a weekly day-off, an annual bonus.

- **The idea of a Universal Basic Income (UBI)** an unconditional cash payment to low-income households and should be transfer directly to women.

Women on one hand are denied equal rights and on the other hand are compared to goddesses in our country. Matrimonial property laws do give women their share but only when the marriage is broken and so there should be a bill to safeguard women's interest even during the marriage.

An Analysis of Emigration from India

Syllabus: Population and associated issues

In News: Recent "Tracking India's Toppers" report suggests that there is an increase in emigration of brightest youth from India.

Present Scenario of Emigration:

- **Largest number of migrants:** As of 2019, 17.5 million people of Indian origin are residing in other countries as immigrants. They **form 6.4% of all international immigrants**.
- **Preferred destination:** The United Arab Emirates (UAE) is the most preferred destination for Indian migrants as of 2019. The US, Saudi Arabia and Oman were among other nations where Indian migrants moved to.
- **Unskilled migrants:** The number of unskilled migrants leaving the country has been falling. An estimated 391,000 left India in 2017, almost half the number in 2011 (637,000), according to a report by the **Asian Development Bank (ADB)**.
- **Source states:** Southern states like Kerala and Tamil Nadu have been traditional sources of migrant workers to the Middle East and South-East Asia.
 - However, in recent years, northern Indian and less economically advanced states have overtaken their southern counterparts. **Uttar Pradesh took the lead for the highest number of emigrants since 2011**, followed by Bihar and Tamil Nadu, while the number of migrants from Kerala declined 69% over six years, from around 80,000 in 2011 and 2013 to under 25,000 in 2017.
- **Students' migration:** Data shows while around the turn of the century about 20 per cent of **high-profile private schools'** high school students went **abroad for graduate studies**, the number shot up to close to 50 per cent by 2010 and to 70 per cent in 2019.

Causes of migration:

Push factors	Pull factors
<ul style="list-style-type: none"> • Rising unemployment: For example, as many as 20.8 million people applied for 90,000 available jobs with the Indian Railways, the country's largest public-sector employer. • Rising population pressure. • Low wages and poverty. • Conflict, terrorism, human rights violations and civil war. 	<ul style="list-style-type: none"> • Stable population and demographic ageing. • Stable government, rule of law and strengthen democracy with good governance. • High wages, better policy for migrants and labour demand with social security. • Better Environment and protection of natural resources.

<ul style="list-style-type: none"> • Ecological disaster, natural hazards and poor availability of natural resources. • Inadequate medical care, poor education and social security. • Poor urbanization. 	<ul style="list-style-type: none"> • Better health and education facilities. • Respect for human rights and protection of minorities.
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Positives of Emigration:

Economic significance:

- **Forex earning:** India received the highest remittance of \$78.6 billion from Indians living abroad as per the U.N. migration agency.
- **Reducing pressure on economy:** As a result of outmigration, the population density of the place of origin is reduced and the birth rate decreases.
- **Diplomatic significance:**
 - **Role of diaspora:** The Indian diaspora provides much needed philanthropic activities in health and education to help achieve the Sustainable Development Goals. It also has a positive impact on foreign direct investments, trade and foreign relations.
 - For example, Prime Minister Narendra Modi's reception at Madison Square Garden is a way of thanking the Indian-American community members who played a big part in his electronic campaign and election funding.
 - **Diplomacy:** The institutionalisation of "diaspora diplomacy" is a distinct indication for the fact that a country's diaspora community has become considerably more important as a subject of interest for foreign policy and associated government activities.
- **Social benefits:**
 - **Skilling and re-skilling:** Migration enhances the knowledge and skills of migrants through exposure and interaction with the outside world.
 - **Better living:** Migration enhances chances of employment and economic prosperity, which in turn improves quality of life.
 - According to the **2018 State of Food and Agriculture report by Food and Agriculture Organisation (FAO)**, outmigration often leads to improved food and nutrition security for migrants.

What are the implications of rising Emigration from India?

- **Economic impact:**
 - **Flight of Capital:** The Reserve Bank of India's liberalised remittances scheme (LRS) for "studies abroad" has increased more than threefold, from US\$ 1.54 billion in 2016-17 to US\$ 4.99 billion in 2019-20.
 - **Growing opportunities:** Report shows that an overwhelming number of the CBSE and ISC toppers going overseas have a non-metropolitan background. It is good thing for such children, from modest social and economic backgrounds and with excellent academic credentials, to seek educational opportunities overseas.
- **Social impact:**

- **Secession of the successful:** It leads to the “secession of the successful” when wealthy families from big cities send their children to schools that in fact equip them only for further studies and life overseas
- **Migration of elite:** it is quite another when wealthy families from big cities send their children to schools that in fact equip them for further studies and life overseas. The topper students may represent “aspirational India”, but the latter constitutes the “secession of the successful”.
- Similarly, an equally worrying trend is the increasing number of India’s super rich is opting for the dual status of owning and managing business in India while living overseas.
- **Loss of human resource:**
 - **Brain drain:** with flight of human capital, as the data suggests that an increasing number of non-resident Indians (NRIs) have become “not-returning” Indians, and are contributing more to their host countries than to their home country the PM’s belief that “**brain drain**” could help create a “**brain bank**” for India’s development is not going to happen.
- **Rising inequality:**
 - **Increasing alienation:** there is now an emerging category of Indians migrating out and opting to stay out of India because they feel the sense of alienation in their motherland and this perception has grown especially among minorities which disturbs the very cultural fabric of India.
 - **Increasing exploitation:** the other side of emigration is characterised by information and power asymmetries in the global labour markets to include exploitation, inhuman living conditions, violence and human rights violations.

Steps taken:

- **Pravasi Bhartiya Bima Yojana, 2006:** The Pravasi Bharatiya Bima Yojana (PBBY) is a mandatory insurance scheme aimed at safeguarding the interests of Indian emigrant workers falling under Emigration Check Required (ECR) category going for overseas employment to ECR countries.
- **Know India Programme:** It was launched as a three-week orientation programme for diaspora youth conducted with a view to promote awareness on different facets of life in India and the progress made by the country in various fields. KIP provide a unique forum for students & young professionals of Indian origin to visit India, share their views, expectations & experiences and to develop closer bonds with the contemporary India.
- **Oversees Citizenship of India Scheme (OCI):** In response to persistent demands for “dual citizenship” particularly from the Diaspora in North America and other developed countries and keeping in view the Government’s deep commitment towards fulfilling the aspirations and expectations of Overseas Indians, the OCI Scheme was introduced by amending the Citizenship Act, 1955 in August 2005. The Scheme provides for benefits comparable to citizens in certain fields, like in economic and education fields etc.

- **Pravasi Bharatiya Samman Awards:** It has emerged an important means for bridging the link of overseas community to their place of origin.
- **Pravasi Kaushal Vikas Yojana (PKVY):** The objective of the Scheme is to institutionalize the process of skill development of emigrant Indian workers.
- **Scholarship Programme for Diaspora Children (SPDC):** under which 100 scholarships per annum are granted to Persons of Indian Origin (PIO) and Non-Resident Indians (NRI) students for undergraduate courses.
- **Madad Portal:** to take timely and speedy action on grievances addressed by people living abroad.
- **VAJRA (Visiting Advanced Joint Research) Faculty Scheme:** It is a dedicated program exclusively for overseas scientists and academicians with emphasis on Non-resident Indians (NRI) and Persons of Indian Origin (PIO) / Overseas Citizen of India (OCI) to work as adjunct / visiting faculty for a **specific period of time in Indian Public funded academic and research institutions**. The Scheme recognizes the value of collaborative research as a crucial element for information sharing among researchers for updating and acquiring knowledge and skills, and also to draw different perspectives to solve a shared problem.

Steps need to be taken to regulate emigration:

- **Amending draft Emigration Bill, 2019** to match the ambitions of its objectives. The provisions continue the post-1983 ad hoc approach towards emigration, relying on the regulation of recruiting agents/employers and the discretion of the government.
- Migration is a complex and highly dynamic process with constantly evolving profiles of migrants and their destinations. Only an **ex-ante-migrant rights-based approach** that is inclusive of all Indian migrants abroad can be considerate and provide adequate security and welfare.
- Formalise a **rotation program** wherein top NRI scientists, engineers, doctors, managers and professionals serve Indian public sector organizations for a brief period, lending their expertise, similar to VAJRA Scheme.

It is high time that instead of attracting foreign nationals to work here, India focus on retaining its brightest minds, who are assisting other countries in achieving technological and economical breakthroughs.

Analysis of Socio-Economic Caste Census

Syllabus: Population and associated issues

In News: Socio-Economic and Caste Census is suffering from many issues. All the issues must be removed before the next exercise is conducted.

Introduction

The Census of India is one of the largest exercises which counts and collects demographic and socio-economic information on the Indian population. It has its own history, context, and purpose.

About the Census

- The census is a colonial exercise practiced since 1881. It has evolved with time. It is used by the government, policymakers, etc. to estimate the Indian population and its access to resources.
- **Caste in Censuses:**
 - The first census of 1872 collected information about caste. The 1872 and 1881 censuses attempted to classify people fundamentally according to the varna system.
 - From the outset of 1872, there was never a formal definition of the census for caste, race or tribe. The recorded details changed in every census from 1872 to 1941.

Caste in Censuses: Over the Years

- **1891:** subdivision of major caste was introduced.
- **1901:** caste of only Hindus and Jains were recorded and in case of other religion name of tribe or race were recorded.
- **1921:** The category of depressed classes was used first time.
- **1931:** Column eight in the general schedule provided for an entry of 'caste tribe or race '.
- **In post-independent India,** caste was considered irrelevant. It was assumed that caste counting would further create divisions so caste census was stopped since 1951.
- **The Socio-Economic and Caste Census (SECC)** was conducted in 2011. It was the largest exercise of the listing of castes and has the potential of finding inequalities at a broader level.

SECC, 2011

- The **Ministry of Rural Development** commenced the Socio Economic and Caste Census (SECC) in June 2011 through a comprehensive door to door enumeration across the country.
- It has generated information on a large number of social and economic indicators relating to households across the country.
- The announcement for caste count during 2011 Census has given rise to a big row among its supporters and opponents.

Procedure followed:

- SECC used the parameters laid down by the S R Hashim committee (urban area) and NC Saxena committee (Rural area). They recommended a three-fold classification of households.
- **Excluded Households:** These are to be identified by assets owned and income. These households are not eligible for welfare benefits of the government.
- **Automatically included Households:** These are the households facing extreme social destitution. These households are automatically included for the welfare benefits of the government.
- **Other Households:** These households are eligible for graded benefits decided on the basis of multiple deprivation indicators.
 - **Administrative jurisdictions:**

- **Rural Areas:** Department of Rural Development.
- **Urban areas:** Ministry of Housing and Urban Poverty Alleviation.
- **Caste Census:** Ministry of Home Affairs: Registrar General and Census Commissioner of India.
- **Census act, 1948:** SECC is not conducted as per The Census act, 1948. The Census Act, enacted in 1948, provided for the permanent scheme of conducting population Census with duties and responsibilities of Census Officers. The Act makes it obligatory on the part of every citizen to answer the Census question truthfully and also penalises for giving false information.

Problem with SECC data on caste:

- **Credibility:** The methodology is not full proof and there are many errors and omissions in the draft data. The procedure of claim and objections are not properly followed.
- **Poor preparation:** Question about caste was included in BPL census (later SECC) without much preparation. Hasty inclusion of caste question has resulted in largely unusable data.
- **Repetition:** The SECC asked interviewer to write down the name of the caste exactly as articulated by the respondent. This led to repetition of various castes as sometimes same caste is spelt in different ways. By some reports, SECC has come out with 46 lakh categories of caste, sub-caste, synonyms, different surnames, gotras in the caste and clan names
- **Lack of reliability:** As far as reliability is concerned, it is not confidential like the census, so respondents could have skewed their answers to be eligible for schemes or due to a number of social reasons.
- **Reinforce caste system:** SECC has the potential to solidify the caste identities of individuals. It won't be helpful in eliminating discrimination from society. SECC has not been able to cover the effects of the caste system on social structure from the local, to the regional, and to national scale.
- **Open to misuse:** The data captured by the census is considered confidential under the census act of 1948. Whereas the personal data captured by SECC is open for use by Government departments. It makes the SECC data prone to use and for misuse by govt.
- **Outdated data:** The time **duration between each census and the delay in the release of data after it is done.** It makes the data obsolete and unusable to estimate the present status of issues. For example, a sizeable amount of data collected under SECC has not been released even a decade later.

Present status of SECC data on caste: The collected caste data was sent to the all the states in 2014 for consolidating the caste count. Later, Government said that a total of 8 crore errors were found in caste particulars and all states and Union Territories, of which approx 6.75 crore errors have been rectified.

The government tasked former NITI Aayog chairman, Arvind Panagariya to look into this but effort was stalled. Government has not yet released the caste data of SECC. However, the

government has released provisional data of rural India to addresses multi-dimensionality of poverty.

Way forward:

- **Ensure no misuse:** There should be transparency on the use of existing caste data by the government for granting or withdrawing benefits. Further, the following steps should be taken:
- **Define usage by linking data:** the collected census data should be linked with other databases of national sample surveys or the National Family Health Surveys that cover issues such as maternal health. This will help in the utilization of this data for dealing with social issues in a better way.
 - Scholars like Mamta Murthi have suggested linking the data of surveys in the past.
- **Coordination:** there should be a closer and continuous engagement between officials of the Census and SECC. It is because the Census and the SECC are projects of governance as well as of academic interest.
- **Timely evaluation:** there should be an evaluation of the previous exercise before the next SECC is conducted.
- **Concerns regarding methodology,** significance, rigidity, spreading, transparency, and privacy need to be taken seriously in the next census.

GENERAL STUDIES-2

The Central Vista Project

Syllabus: Parliament and State Legislatures – structure, functioning, the conduct of business, powers & privileges and issues arising out of these.

In News: The Supreme Court pronounced a 2-1 judgment and cleared the Central Vista Redevelopment Project. Petition challenging the Centre's change-of-land-use notification of March 2020 for 86 acres of land was filed in SC.

About the judgement:


Following statements were put forward by the majority judgment and dissenting judge:

- **SC's view on the limits on its power:** As per the bench, development policies of the Government of the day must be debated in the Parliament. It further stated that the role of the Court is limited to examine their constitutionality and not to govern.
- Further, the bench has asked for the **creation of smog towns and deployment of smog guns** to mitigate the pollution from construction materials and directed that waste management at the site be subjected to constant monitoring.

About the Central Vista

- **History:** Britain's King George V on December 12, 1911, at his coronation announced the transfer of the seat of the Government of India from Calcutta to the ancient Capital of

MAJORITY ORDER	DISSENTING ORDER
<p>" We feel constrained to note that... the petitioners enthusiastically called upon us to venture into territories that are way beyond the contemplated powers of a constitutional court.</p> <p>We are compelled to wonder if we, in the absence of a legal mandate, can dictate the government to desist from spending money on one project and instead use it for something else...</p> <p>We are equally compelled to wonder if we can jump to put a full stop on execution of policy matters in the first instance without a demonstration of irreparable loss or urgent necessity, or if we can guide the government on moral or ethical matters without any legal basis</p> <p>-Justices A M Khanwilkar and Dinesh Maheshwari</p>	<p>The Central government could not have notified the modified land use changes, without following the procedure and without prior approval/permission from the Heritage Conservation Committee. Further, the local body is expressly interdicted from issuing building permits in respect of the listed heritage buildings,</p> <p>It was necessary for the respondents to inform and put in public domain the redevelopment plan, layouts, etc with justification and explanatory memorandum relating to the need and necessity, with studies and reports</p> <p>-Justice Sanjeev khanna</p>



Delhi. A 20 year-long project of Central Vista development was led by architects Edwin Lutyens and Herbert Baker. It was completed in 1927 and inaugurated by Viceroy Lord Irwin.

- **Location:** Central Vista is 3.2 kilometre area in Delhi housing Parliament House, Rashtrapati Bhavan, North and South Blocks, Rajpath, India Gate, National Archives and the then princes' houses around India Gate.
- **Heritage status:** In the 1962 Master plan of Delhi, the site was declared a heritage precinct as an "important site to meet the aspirations of a rich culture".

About the Central Vista Redevelopment Project

- The project was announced by the Ministry of Housing and Urban Affairs in 2019 as a redevelopment project to give a new identity to the 'power corridor' of India.
- **Redevelopment project includes:**
 - Construction of a new parliament next to existing one,
 - Prime minister and vice-president's residences along with 10 building blocks that will accommodate all government ministries and departments.
 - Revamping of the 3-km-long Rajpath — from Rashtrapati Bhavan to India Gate.
- **Need of the project:**
 - **Incorporate the expansion:** The current Parliament was built in 1927 to house the legislative council. It was not intended to house a bicameral legislature that the country has today. Thus, the current building will be under more stress when the number of seats in Lok Sabha and Rajya Sabha are raised.
 - **Meet the aspirations of independent India:** The present Parliament House signifies an imperial origin, whereas India is a successful citizen-led democracy. Thus, the present parliamentary building is not in accordance with the aspirations of independent Indian citizens and the new building will stand out as an institution created by 130 crore citizens.
 - **International examples:** There are international examples of building new parliamentary structures after gaining independence.
 - The Capitol Building in the USA was constructed within 25 years of the country's independence.

- In Brazil, the National Congress Building was constructed, almost 70 years after Independence, in 1960.
- **Depict diversity of India:** The Present Parliamentary complex was built by the British on their own patterns and designs. New building's design and interiors will capture Indian values and the rich diversity of our regional arts, crafts, textiles, architecture, and culture.
- **Revive economic distress:** World history proves that Public infrastructure projects playing a key **role in reviving economies** in distress.
 - For example, the Tokyo Tower in Japan, built after World War II, provided employment to thousands of workers, instilled a greater sense of nationalism, and contributed to the resurgence of the Japanese economy.
- **Flaws in the existing building:** The existing building does not conform to fire safety norms and is not earthquake proof. Water and sewer lines are also haphazard and this is damaging its heritage nature. 2001 Parliament attack is a fit example questioning the safety.

Issues raised in the petition

- Supreme Court was hearing the petition on the following grounds, put forward by the petitioner:
- **Change of land use:** In 2020, Delhi Development Authority made changes in the land use to facilitate the utilization of public open spaces such as a district park and children's play area as government offices.
 - **Before notification**, there was a 60/40 split between public/ semi-public (60 percent) use including museums, galleries, centres of arts, national library, (the Delhi) high court, etc., and government use (40 percent).
 - **After notification**, it was changed to 95 percent for government use and 5 Percent for public and semi-public use.
- **Violations of municipal law:** Consultation with Delhi Urban Commission (DUAC) had to be completed at the plan conception stage itself. In the absence of a comprehensive consultation, the approvals were granted without proper application of mind or procedures.
- **Violations of environmental law:** Parliament building was granted environmental clearance by the Ministry of Environment, Forests & Climate Change without any Environment Impact Assessment (EIA).
- **Change in heritage Status:** Central Vista has been accorded the highest Grade 1 heritage status by the Unified Building Bye-Laws of Delhi.
 - Grade 1 classified buildings cannot be changed, and "no intervention can be made unless it is in the interest of strengthening and prolonging the life of the buildings".
 - However, later on, the Heritage Conservation Committee made a distinction between pre-Independence and post-Independence buildings to redefine the status of 'heritage', allowing the demolition of post-independence constructions, built by Indian architects and engineers in the 60s.

- It effectively allowed the demolition and replacement of buildings like Krishi Bhawan, Udyog Bhawan and Rail Bhavan, in addition to the National Museum and the Indira Gandhi National Centre for the Arts (IGNCA).
- **Central Vista Committee (CVC):** As per the petitioner, CVC was set up to rush the approvals. It consisted of the members, who were proponents of the central vista project. Thus, there was an apparent conflict of interest.

PERSPECTIVE: Does the Central Vista Project point towards any larger issue?

- **Horizontal Accountability:** Horizontal accountability refers to ensuring a check on the government, by creating connected state organizations such as heritage committees and environmental regulators.
 - The government argues that horizontal accountability is in place.
 - Though it has also said that the provisions for consultation are not absent, the process of consultation is vague.
- **Vertical Accountability:** Vertical accountability requires citizen oversight.
 - The citizens are asking for an improved participatory process.
 - There has been no attempt to ensure public participation.
 - The judgment in central Vista is not clear on the matter of public participation.
- **Architectural services procurement:** The process of choosing a designer for a public project needs improvement as there is a lack of evaluation criteria and standards for design. Also, weightage is given to lower fees instead of better designs.
 - The architecture firms face entry barriers as their expertise is judged on the basis of their company's turnover. The unreasonable revenue conditions make it difficult for many firms to qualify and also reduce the pool of choice.

Conclusion

Although SC has given a green light to the Central Vista Project, it also underlined the need for the significance of transparency. It has stated that if the relevant information is not placed in the public domain, the public will be ill-equipped to understand the need and rationale behind such projects.

Government should become more transparent and try to bring in a consultation process at the initial stage of the project developments to maintain a level of confidence among people of the country.

Criminalizing Criticism

Syllabus: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

In News: Recently **Bihar government** decided to categorize defamatory and offensive social media posts against government officials as cybercrime. Bihar Police has issued a circular to implement this order.

This is not the first instance when the legal route have been used to silence the critics of the government.

Has the use of sedition and other such laws been a source of harassment?

- **Accused-convicted gap:** As per the National Crime Records Bureau (NCRB), 70 people were accused of sedition in 2018. But only four cases actually ended in conviction.
- **View of the court:** In August 2016, the court criticized the then Tamil Nadu Chief Minister J Jayalalithaa for misusing the criminal defamation law to “suffocate democracy” and, the court held that, “public figures must face criticism”.
- **Invalid cases:** In May 2020 Madras High Court declared 28 criminal defamation proceedings filed by the Tamil Nadu government as invalid.
- **Conviction under UAPA:** The NCRB Report 2018 mentions, the conviction rate of offenders prosecuted under the Unlawful Activities Prevention Act was just 14.5% in 2015.

These are clear examples of government using sedition, Criminal defamation and other suits as a **means of harassment**.

What are the laws governing criticism against the government?

- **Sedition:** Sedition under section 124A of the IPC (Indian Penal Code). Sedition cases are punishable with a maximum sentence of life imprisonment.
 - Sedition is defined as any action that brings or attempts to bring contempt or hatred towards the government of India.
- **Criminal defamation:** Criminal defamation under section 499 of the IPC.
 - Defamation is defined as the communication of a false statement that harms the reputation of an individual person, group, product, business, government, religion, or nation.
- **IT Act, 2000:** The Government enacted the Information Technology (IT) Act 2000 for matters related to cybercrime and e-commerce. Under this act, the Government can punish any crime involving a computer or a network. The Act can charge India citizens as well as foreigners.
- **UAPA, 1967:** The Unlawful Activities Prevention Act of 1967. The Act aims to effectively prevent unlawful activities and associations involved.
 - In 2019 the government amended the provisions of the Act to designate an individual as a terrorist. The Law prescribes a maximum punishment of death penalty or life imprisonment.
- **Other laws:** Apart from these Acts several states have enacted specific laws to govern the criticisms.
 - For example, the draft bill of Shakti Act of Maharashtra has a provision for stricter punishment for offenders who post defamatory messages on social media.

View of judiciary on the law governing criticisms

- **Kedarnath Singh vs State of Bihar case, 1962:** In Kedarnath Singh vs State of Bihar case 1962, Court upheld the constitutional validity of Section 124A (Sedition).
 - The Court mentioned, “citizen right to freedom of speech and expression does not incite people to be violent against the government or with the intention of creating public disorder”.

- **Balwant Singh v State of Punjab case 1995:** In Balwant Singh v State of Punjab case 1995, the Supreme Court held that mere sloganeering that evoked no public response did not amount to sedition.
- **Subramanian Swamy vs Union of India, 2014:** The Supreme Court of India, in the Subramanian Swamy vs Union of India, 2014, upheld the constitutional validity of the IPC (Section 499 and 500).
 - The court mentioned the fundamental right to live with dignity and reputation “cannot be ruined solely because another person can have his/her freedom”.
- **Shreya Singhal vs. Union of India, 2015:** In Shreya Singhal vs. Union of India 2015 case, the Supreme Court struck down Section 66A (this provision criminalizes sending offensive messages through a computer or other communication devices) of the Information Technology Act, 2000. The court also held that the provisions of section 66A have violated Right to freedom of speech and expression.

PERSPECTIVE: Do we need such laws in India?

Yes, we need such laws:

- **Combating rogue elements:** These laws have utility in combating secessionist, anti-national and terrorist elements. Some highly publicized cases cannot be the reason to repeal section 124A, section 499 and UAPA.
- **Contempt of government:** If contempt of court invites penal action, the contempt of government should also attract similar punishment for the smooth functioning of democracy.
- **Stability:** These laws provide stability to the democratically elected government. Sedition laws, Defamation laws and UAPA act as a strong defence against violence and illegal activities aimed to overthrow the government.

No, we should repeal such laws:

- **Violates right to free speech:** These provisions are clear examples of a violation of the Right to Freedom of Speech and Expression. Right to question, criticize and change rulers is one of the fundamental ideas of democracy. Both the sections of IPC(124A and 499) and the provisions of UAPA are in direct conflict with the aforesaid Rights.
- **Legal routes already exist:** IPC and Unlawful Activities Prevention Act have provisions that penalize “disrupting the public order” or “overthrowing the government with violence and illegal means”. These are sufficient for protecting national integrity. There is no need for Section 124A and 499. It can be repealed.
- **International commitments:** In 1979, India ratified the International Covenant on Civil and Political Rights (ICCPR). The ICCPR sets out internationally recognized standards for the protection of freedom of expression. However, the misuse of sedition, criminal defamation and UAPA is inconsistent with India’s international commitments.
- **In line with world democracies:** Even the UK (sedition law originated) and Australia have removed sedition laws. International bodies such as the UN had recognized the threat posed by criminal defamation laws.

- **Good governance:** The criticisms reach at the right time to the government, then it can save a lot of resources, government machinery, etc.

Way Forward

- There are certain ways to improve sedition, criminal defamation and the application of UAPA in India.
 - We have to **educate the Law enforcement authorities to prevent the problem of misuse**. The enforcement authorities might be trained regarding the application and non-application cases of sedition, criminal defamation and UAPA suits.
 - The **State has to follow the Parent-Child approach** during the criticisms where raised. The Madras High court advocated this approach in May 2020.
 - Parent-Child approach: The state must act like it is the parent of all its citizens. Despite the insult (sedition or criminal defamation) by children (citizen), parents don't discard their children quite easily. Like that State also accept the fact that public figures must face criticism.
- Third, **The Protection of Speech and Reputation Bill, 2016** in modified form can be enacted by the government. The Private member bill has certain important provisions such as
 - Setting the maximum claim limits and barring governments, local bodies and other institutions (statutory functions) from filing suits for defamation and sedition.
 - Providing punishments such as apologies, corrections and retractions, for a lesser form of crimes.

India is an open and liberal society, the largest democracy. But to secure national integrity, divisive forces have to be kept in check. So, it is necessary to retain the laws criminalising criticisms. But the wrongful enforcement and misuse have to be checked.

NFHS (National Family Health Survey)-5 : The other side

Syllabus: Issues relating to poverty and hunger

In News: Recently, the government released the findings of first phase of NFHS(National Family Health Survey)-5 data. The data has been interpreted by the critics adversarially resulting in a debate over the government performance on the health indicators.

About National Family Health Survey (NFHS)

- 5th round of National Family Health Survey (NFHS-5): The MOHFW recently released the NFHS-5 data of first phase.
- NFHS: It is a large-scale, multi-round survey conducted based on the representative samples collected from households throughout India.
- Its role: The NFHS survey provides state and national information for India on various health parameters such as fertility, infant and child mortality, the practice of family planning, maternal and child health, reproductive health, nutrition, anaemia, utilization and quality of health and family planning services.
- Goals of National Family Health Survey (NFHS):

- To provide essential data needed by the Ministry of Health and Family Welfare and other agencies for informed decision making and policy and programme intervention purposes.
- To provide insight regarding important emerging health and family welfare issues.

NFHS-5: The critic's view

- **Malnutrition:** Of the 22 States and UTs, there is an increase in the prevalence of severe acute malnutrition in 16 States/UTs (compared to NFHS-4 conducted in 2015-16).
 - The percentage of children under five who are underweight has also increased in 16 out of the 22 States/UTs.
 - There is also an increase in the prevalence of other indicators such as adult malnutrition measured by those having a Body Mass Index of less than 18.5kg/m² in many States/ UTs.
 - Present data suggests that child nutrition in India has not progressed in last 5 years. Particularly, stagnation of stunting rates is alarming, as height, unlike weight, cannot be reversed in short period of time and becomes permanent after a certain age.
- **Increase in Child Marriages:** There has been an increase in child marriages in Tripura (40.1% from 33.1% in 2015-16), Manipur (16.3% from 13.7% in 2015-16) and Assam (31.8% from 30.8 % in 2015-16).
 - States such as Tripura, Manipur, Andhra Pradesh, Himachal Pradesh and Nagaland have also shown an increase in teenage pregnancies.
- **Child mortality:** Infant Mortality Rate (the number of deaths per 1000 live births for children under the age of 1) and Under 5 Mortality Rate data is mostly stagnant.
 - Between NFHS-3 (2005-05) and NFHS-4, there was progress on mortality reduction but NFHS-5 and NFHS-4 are about five years apart still there is very little progress in many states.
 - In Maharashtra, the under-5 mortality rate is basically the same in NFHS-4 and in Bihar, it reduced by just 3% over five years.
- **Anaemia:** Anaemia levels among children as well as adult women have increased in most of the States with a decline in anaemia among children being seen only in four States/UTs.
- **Obesity:** Most States/UTs also see an increase in overweight/obesity prevalence among children and adults, once again drawing attention to the inadequacy of diets in India both in terms of quality and quantity.
- **Stunting:** The data report an increase in childhood stunting in 13 of the 22 States/UTs compared to the data of NFHS-4.
 - There was a 10-pp (Percentage Point) decline in stunting among children under five between 2005-06 (NFHS-3) and 2015-16 (NFHS-4), from 48% to 38%, averaging 1 pp a year. This was considered to be a very slow pace of improvement.

- **Starvation:** Volunteers of the Right to Food campaign have listed over 100 starvation deaths based on media and/or verified fact-finding reports since 2015.
- **Food insecurity:** In the Hunger Watch survey carried out in 11 States, two-thirds of the respondents reported that the nutritional quality and quantity of their diets worsened in September–October compared to before the lockdown.
- **Jump in Vaccination:** The survey has found considerable improvement in vaccination coverage among children aged 12–23 months across all States/UTs.
- **Urban-Rural gender gaps in Internet use:** There is an urban-rural gap as well as gender divide with respect to the use of the Internet. On average, less than 3 out of 10 women in rural India and 4 out of 10 women in urban India ever used the Internet.
- **Increase in bank accounts operated by women:** The number of bank accounts that women not only hold but also operate themselves has increased dramatically over the past five years.
- **Spousal Violence:** It has witnessed an increase in five states, namely Sikkim, Maharashtra, Himachal Pradesh, Assam and Karnataka.
 - Karnataka witnessed the largest increase in spousal violence, from 20.6% in NFHS-4 to 44.4% in NFHS-5.

Pre- pandemic data: The present data represents the picture before the advent of COVID pandemic. There is a high possibility that child nutrition has deteriorated as several surveys have pointed out severe food insecurity across India in 2020.

- Further, mid-day meals in schools and anganwadis were discontinued after lockdown and have not resumed yet.
- Some of the states tried to make arrangement like distribution of cash or “take-home rations”, but were not adequate.
- Prolonged closure of anganwadis and schools might have resulted in massive disruption of routine health services including immunisation.

Has NFHS results been misinterpreted by the critics?

It is important to compare India with the rest of the developing world. Trends in hunger, nutrition, inequality, and growth among others can be carefully evaluated in a comparative angle with the help of World Bank data provides. This has revealed some of the misinterpretations of NFHS data:

- **Bangladesh’s underweight percentage:** Underweight percentage in 2015 was stated as 22 per cent but the World Bank data states it to be 30.1 per cent, which makes it 4.7 percentage points (ppt) lower than India, not 12.8 ppt lower.
- **Teenage pregnancies:** teenage pregnancies in India were 19.9 per cent in 2005 which reduced to 8.7 per cent in 2015 and further got 1 ppt (Percentage point) lower in 2019. Hence, net improvement was about 12 ppt in 15 years.
 - Whereas the level was 10 ppt higher constantly in the developing world during the same period.
- **Welfare:** Welfare improved between 2015 and 2019 according to a very large number of NFHS indicators. A summary of these data is as follows:

- **Child Mortality:** Data on three indicators (neo-natal, infant and under-five) show an improvement between 3 and 4 ppt.
- **Immunizations:** It improved drastically. For instance, the hepatitis B vaccine percentage (for children 12-23 months) increased from 64.8 per cent in 2015 to 83.6 per cent in 2019.
- **Breast-feeding and diet of children 6-23 months:** Average gain of 4 ppt for four indicators.
- **Negative trend in seven young women indicators is 0:** Modern birth control methods, age at marriage, teenage pregnancies, and sexual violence all show improvement. The average improvement in these seven indicators is 3.9 percentage points.
- **Negative trend in 15 adult indicators is 0:** Average gain is 4.1 percentage points.
- **Other improvements:** Some of the indicators show an increase of 9 percentage points and above in households with electricity (9.2 ppt), improved sanitation facilities (17.3 ppt), clean fuel for cooking (18 ppt) and women having a bank account that they use (29.8 ppt increase to a level of 77.2 per cent in 2019).

The points stated above show a large divergence in factual data and its interpretation. There is improvement in close to a 100 indicators and stagnation in less than 5 indicators.

Way Forward

- **Nutritious products such as eggs with a fruit option** or such for vegetarians should be included in mid-day meals and take-home rations for young children and pregnant women.
- **Extending Maternity benefits:** It must be extended to all children with an increase in benefits beyond outdated Rs 6,000 per child.
- **Upgradation of anganwadis:** ICDS programme must be upgraded and the manpower of 14 lakh anganwadis should be utilised in a way to transform anganwadis into vibrant child development centers at the village level as been done in some southern states along with states like Himachal Pradesh and Odisha.
- **Inclusion of pulses: World Food Programme (WFP)** includes 60 grams of pulses in its typical food basket, alongside cereals, oils, and sugar, and salt and according to the Global Pulse Confederation, pulses are part of a healthy, balanced diet and have been shown to have an important role in preventing illnesses such as cancer, diabetes, and heart disease. Thus, Pulses should be included in the PDS of India.
- **Access to finance and innovations:** Inclusive access to finance to strengthen and expand rural supply chains is also crucial. Small landholders need access to financial resources, technology, and innovation to ensure that the produced food reaches from farm to fork.

Pradhan Mantri Kaushal Vikas Yojana 3.0

Syllabus: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

In News: In a bid to empower India's youth with employable skills, the Ministry of Skill Development and Entrepreneurship (MSDE) launched Pradhan Mantri Kaushal Vikas Yojana (PMKVY) 3.0, in nearly 600 districts.

More in News

India skill report 2019 - About 46.21 percent of students were found employable or ready to take up jobs in 2019.

Introduction

Skill India Mission was launched by the government in 2015 under which the flagship scheme Pradhan Mantri Kaushal Vikas Yojana (PMKVY) was implemented. It aims to train over 40 crore people in India in different skills by 2022.

PMKVY 1.0:

- Aim: To promote skill development by following approaches:
- Providing short duration skill training and
- Providing monetary rewards to youth for skill certification.
- Recognition of Prior Learning
- National Skill Development Corporation is the implementing agency.

PMKVY 2.0

- Aim: PMKVY 2016-20 (PMKVY 2.0) was launched to
- scale up PMKVY 1.0 both in terms of including other Sectors and expanding its Geographical reach
- synchronizing it with other policies of the Government of India like Swachh Bharat, Make in India, Export programs etc
- Two Components of PMKVY 2.0:
 - Centrally Sponsored Centrally Managed (CSCM): It was implemented by National Skill Development Corporation. 75% of the PMKVY 2016-20 funds and corresponding physical targets have been allocated under CSCM.
 - Centrally Sponsored State Managed (CSSM): It was implemented by State Governments through State Skill Development Missions (SSDMs). 25% of the PMKVY 2016-20 funds and corresponding physical targets have been allocated under CSSM.

PMKVY 3.0:

- PMKVY 3.0 is a step to attain aims of 'Atmanirbhar Bharat'.
- Implementation: It will be implemented in a more decentralized structure with greater responsibilities and support from States/UTs and Districts.
 - District Skill Committees (DSCs), under the guidance of State Skill Development Missions (SSDM), shall play a key role in addressing the skill gap and assessing demand at the district level.

- **Objective:** It envisages to train around 8 lakh candidates over the scheme period of 2020-2021.
- **Features:**
 - This phase is designed towards making skill development more demand-driven and decentralised in its approach with a focus on digital technology, Industry 4.0 skills and COVID-related skills.
 - District Skill Committees (DSCs) under the guidance of State Skill Development Missions (SSDM) shall play a key role in addressing the skill gap and assessing demand at the district level.
 - It will encourage healthy competition between states. This is achieved by increasing the allocation to those states that perform better.
 - It will also be a propagator of vocational education at an early level for youth to capitalize on industry-linked opportunities.

Major challenges to skill development

- **Absence of Mapping skill requirements** sector-wise and geographically to identify potential population.
- **Lack of a culture of vocational training** as an aspirational choice.
- **Non – Involvement of industry** – Participation of industries is required for improving quality and relevance – scaling up the apprenticeship programme.
- **A large share of the informal sector** – Integrating the informal sector into the skill development ecosystem is necessary as 90% Indian economy is characterized as Informal.
- **Absence of certification system** – Putting in place an effective, internationally recognized assessment and certification system.
- **Lack of independent regulator** – Currently we do not have an independent regulator overseeing the various skill development initiatives in India. The Ministry of Skill Development and Entrepreneurship (MSDE) is acting as both policy setting and regulation body.

Suggested Steps

- **Mapping skill requirements for a demand-driven skill development ecosystem:** Skill development plans and strategies should be developed by geography and sector by mapping the availability of infrastructure and based on assessing skill requirements both at the national and state levels.
- **Vocational training centres:** Creating vocational training innovation centres for systematic research and conducting longitudinal studies on improving vocational education for real-time data.
- **Improving training delivery and quality** – Capacities of teacher training institutes need to be upgraded to ensure the availability of qualified trainers. It is also important to provide for cross-learning by teachers and industry experts through industry-institute linkages.

- **Apprenticeship programmes** – Creating awareness about recent amendments in the Apprenticeship Act, 1961, and about the National Apprenticeship Promotion Scheme (NAPS) among different stakeholders.
- **Vocal for local** – Traditional knowledge systems should also be strengthened by developing curricula for creative industries at tertiary institutions and certification programs.
- **Concept of transferable skills** – Along with the Recognition of Prior Learning (RPL) initiative launched with PMKVY, the identification of transferable skills should also be established as an area of focus. This can be addressed through:
 - Developing a matrix of skills that are transferrable across sectors and trades.
 - Making these technological and vocational skills that are transferrable across occupations an integral part of the basic skill development curricula across sectors.
- **Role of NSDC** – The envisioned role for the NSDC is that of an enabler for building skill development institutions. Currently, NSDC's bandwidth is consumed by managing the PMKVY, which primarily does not address the higher levels of skilling or market-led, non-sponsored skilling programs. Capacity within the NSDC may be supplemented in the form of a dedicated cell for PMKVY so that the main body of NSDC can focus on its envisioned role.
- **Funding** – Alternative financial sources such as Corporate Social Responsibility (CSR) funds, Compensatory Afforestation Fund Management and Planning Authority (CAMPA) funds, Building & Construction Workers' ccess, Members of Parliament Local Area Development (MPLAD) Fund needs to be tapped for funding.

Conclusion – For harnessing the demographic advantage that it enjoys; India needs to build the capacity and infrastructure for skilling/re-skilling/up-skilling existing and new entrants to the labour force. PMKVY 3.0 presents the opportunity to become atmanirbhar by making our labor force self-reliant.

State of Prisons in India

Syllabus: Government policies and interventions for development in various sectors and issues arising out of their design and implementation

In News : The custodial death of the two men in Tamil Nadu's Thoothukudi district has sparked massive outrage in the state over police brutality.

More in News

NCRB 2019 released its State of Prisons in India Report.

Introduction

Prisons'/'persons detained therein' is a State subject under Entry 4 of List II of the Seventh Schedule to the Constitution of India. Administration and management of prisons is the responsibility of respective State Governments.

However, the Ministry of Home Affairs provides regular guidance and advice to States and UTs on various issues concerning prisons and prison inmates.

Constitutional Provisions

- **Right to life and personal liberty** - The Supreme Court held that right to life is one of the basic human rights, guaranteed to every person by Article 21 and not even the State has authority to violate it.
- **Right to a speedy trial** - The Supreme Court has considered the right to a speedy trial as one of the essential ingredients of Article 21 of the Constitution. Delay in the disposal of cases is a denial of justice, so the Court is expected to adopt necessary steps for expeditious trial and quick disposal of cases.
- **Right to free legal aid** - Article 39A of the Constitution of India deals with the obligation of the State to provide free Legal Aid to such accused prisoners both in the prison and outside.

State of Prisons in India

- **Over-crowded jails** - NCRB 2019 data says there are 1350 functional jails in India, with a total capacity of approx. 4 Lakh prisoners but actual strength exceeds 4.78lakh.
- **More Under-trials** - 69 % (approx. 3.3 lakh) were under trials and only 30.11% are convicted for crime. In general, under trials spend three months to five years in jail before getting bail.
- **Custodial torture and deaths** - The number of “unnatural” deaths in prisons has doubled between 2015 and 2016, from 115 to 231. The rate of suicide among prisoners has also increased by 28% from 77 suicides in 2015 to 102 in 2016.
- **Lack of basic amenities** - Prison structures in India are in dilapidated condition. Further, lack of space, poor ventilation, poor sanitation and hygiene make living conditions deplorable in Indian prisons.
- **Discrimination:** According to Humans Rights Watch, a “rigid” class system exists in Indian prisons. There is rampant corruption in the prison system and those who can afford to bribe, often enjoy luxuries in prison.
- **Under-staffing** - While 33% of the total requirement of prison officials still lies vacant. Police personnel in India is 181/lakh population which is much less than the UN prescribed 222/lakh.
- **Psychological effect** - Lack of inspection and crude usage of oversight mechanisms transform prisons into startling wrecks with poor living conditions. It causes adverse psychological effects such as depression, claustrophobia, anxiety and panic attacks, stress etc. it makes the prisoner more vulnerable than before to criminal penchants.
- **Lack of comprehensive data** - The data by NCRB does not include the number of prison visits by official and non-official visitors which typically include district magistrates and judges, social workers and researchers.

This is essential to uncover torture and other forms of ill-treatment, increase transparency and balance the power asymmetry in prisons.

Why has prison populations increased during a pandemic which necessitated decongestion?

- **Misplaced priorities:** High number of lockdown-related arrests reveals that policing priorities have been misplaced and a public health crisis has been treated more as a law and order issue.
 - For example, arrests made during the first three phases of the lockdown, unusual number of arrests under Excise Act (15.8 percent) and the Public Gambling Act.
- **Access to bail:** Reduced court capacities due to the pandemic, have impaired the access to bail for arrested persons.
- **Virtual courts:** The adoption of a virtual court system also aggravated judicial delays.
- **Failure of the criminal justice system:** Police, courts and prisons to work in an integrated manner towards the decongestion even during this pandemic.

Steps to be taken

- **Ensuring right to legal aid** - It is high time that the access to legal aid (which is a directive principle to state policy under Article 39A) should be made a fundamental right.
- **Undertrials should be released on Bail:** In 2017, the Law Commission of India had recommended that undertrials who have completed a third of their maximum sentence for offences attracting up to seven years of imprisonment be released on bail.
- **Separation of Under Trials, women offenders, first-time offenders and youth offenders** - Under trials are usually people who haven't been convicted of the offence yet and such prisons should be kept in a separate prison cell, away from hardened criminals so that they do not get influenced by such offenders.
- **Unified prison management system:** NALSA has recommended that there should be a unified prison management system that has records of all inmates so they don't have to run from pillar to post for copies of documents like court orders.
- **Improved Transparency:** The transparency in the judicial system should be increased to understand the actual scenario in the prisons. Transparency can be brought by NHRC inspections and Court mandated inspections and mainly the follow up of these would serve the purpose.
- **Capacity building of prison staff:** The Supreme Court has directed that there should be proper training manuals for senior staff in how to treat and deal with inmates.
- **Social security for prisoners:** Wages that are paid to prisoners who are serving sentences should be increased and should be on par with global benchmarks. So that when they come out, they have some better financial security.
- **Skill development of the prisoners:** The major role prisons should play is of reformation and making sure that, once out, inmates are properly integrated into society. That is possible when more skill development programs are introduced in the jails to enhance their chances of earning.

Implementation of recommendation of following committees constituted for prison reforms:

- **Justice Mulla Committee 1983:**
 - All India cadre for prison staff and Bringing prison under the concurrent list

- Government should form a National Policy on Prisons
- Government to use alternatives to imprisonment such as community service, etc.
- **Justice V. R. Krishna Iyer committee on women prisoners 1987:**
 - Separate institutions with women employees alone for women offenders.
 - Necessary provisions to restore the dignity of women even if convicted.

Best Practices

- **Open Prisons:** The criminal justice system in Norway focuses on the principle of restorative justice and rehabilitating prisoners. 30% of prisons in Norway are open and all prisons ensure healthy living conditions, vocational training and recreational facilities.
- **Yellow Ribbon Project (Community Involvement):** The goal of the yellow ribbon project is to reintegrate and rehabilitate prisoners. It involves prisoners voluntarily giving up all gang associations (including having tattoos removed). Part of the challenge prisoners faces after being released is that of the social stigma of having been in prison.

Conclusion

India is in forefront of human rights causes all across the world, but the poor condition of Indian prison reflects the paradox that exists in the Indian criminal justice system. Prison reforms forms the pillars of the criminal justice system which require comprehensive reforms.

Vaccine hesitancy: Crisis within a crisis

Syllabus- Issues relating to development, and management of Social Sector/Services relating to Health, Education, Human Resources.

In News: As the country readies to implement its COVID-19 vaccination programme, vaccine hesitancy could be an issue that the government needs to address forthwith.

Why vaccination is necessary?

- **Trains body's immune system:** A vaccine is a substance that resembles the disease-causing agent called a pathogen. It trains the body's immune system against the attack of **specific pathogens, and** creates a 'memory'.
 - In future, this memory will be used to destroy, and prevent disease when the pathogen infects.
- **Contribution of vaccines:** Till now, Vaccines have contributed to the eradication of smallpox, and near eradication of polio. It has also contributed to the prevention of over 20 other life-threatening diseases.
 - This has saved an estimated 2-3 million deaths annually.
- Also, vaccinating children under India's Universal Immunization Programme adds \$44 to the economy. Vaccination ensures that children grow up to be healthy adults.

More on news:

- Prime-Minister hailed the approval of two made in India COVID-19 vaccines by the drug regulator, and said India is on the threshold of beginning the largest vaccination programme in the world. However, COVID-19 vaccination intent is decreasing due to increasing hesitancy.

- Till now, more than 7 lakh people have been vaccinated. Yet, India is facing the issue of vaccine Hesitancy. Even, some doctors, and healthcare workers are continuing to be hesitant to get vaccinated.
- **The doubt on Indian vaccines:** In India, several questions have been raised about the efficacy of the indigenous vaccines. Concerns have also been raised against foreign vaccines Moderna, and Pfizer vaccines, which reported more than 90% efficacy. Broadly, these vaccines have faced questions on efficacy, higher medications etc.

What is vaccine hesitancy?

- **World Health Organization's view on Vaccine Hesitancy:** The SAGE Working Group on vaccine hesitancy concluded that vaccine hesitancy refers to delay in acceptance or refusal of vaccination despite availability of vaccination services.
- Vaccine hesitancy is complex, and context specific, varying across time, place, and vaccines.

Reasons for vaccine hesitancy

The primary reasons for vaccine hesitancy are complacency, convenience, and confidence [3C model].

- **Complacency-** Refers to a low perceived risk of vaccine-preventable diseases, and therefore it is assumed vaccines are not needed.
- **Convenience** - Vaccination convenience is a significant factor that entails physical availability, affordability, and willingness-to-pay. This continuum ranges from total acceptance to complete refusal.
- **Confidence-** Refers to a lack of trust in the effectiveness, and safety of vaccines, the system that delivers them – including the reliability of the health professional –, and/or the motivations of policy-makers who make determinations about vaccines.

Following findings further, validate the reasons for increasing vaccine hesitancy:

- **Unsure about the vaccine:** Recently, a survey with approximately 11,000 respondents was conducted in India to understand the openness to take the vaccine. About 53 percent of the respondents were unsure about taking COVID-19 vaccine.
- **Misinformation:** Misinformation, specifically online, is a big threat to trust in vaccines, and their programs.
- **No urgent need:** A survey by New Delhi's citizen-survey platform Local-Circles has found that about 69 percent of respondents saw no urgent need to get immunized.
- Key reasons cited for hesitancy were **limited information about efficacy, side-effects, and perceived high immunity level.**
- **Vaccination intent decreasing:** Moreover, COVID-19 vaccination intent is decreasing globally.
 - Since August, intentions to get vaccinated have dropped in 10 of 15 countries, most of all China (down 12 percentage points), Australia (down 9 percentage points), Spain (down 8 percentage points), and Brazil (down 7).

Why Vaccine rollout was a good idea despite vaccine hesitancy?

- **Firstly**, checking efficacy is very lengthy and difficult task. To test 10,000 individuals and getting result will take at least six months to get meaningful results.
- **Secondly, declining level of infection due to** weakening of virus will make the assessment further difficult.
- **Thirdly**, Experts suggest that antibody-dependent enhancement resulting in replication of virus makes the efficiency of all vaccine candidates doubtful.
 - Antibody-dependent enhancement is a phenomenon in which virus-specific antibodies increase the severity of the virus or replicate the virus. Thus, rollout of vaccine by the government is a step in the right direction.

Way Forward

Vaccines are a product of science. If the scientific method, and process is followed honestly based on data, and evidence, there is no room for doubting the efficacy of vaccines. India has a huge population to be vaccinated, and thus it needs to take the following steps to remove vaccine hesitancy:

- **Strategies:** Communication strategies are critical for tracking, negotiating, and shaping perceptions around the vaccines, and the programme.
- **Providing confidence to the public:** It is very important to give confidence to the public by discussing the robustness of various processes involved in drug/vaccine development such as clinical trial designs, conduct, monitoring, analysis, reporting, and the regulatory reviews that happen before it is approved.
 - This will make the public aware of the rigorous processes followed for clinical trials, and the approval, as followed by regulators.
 - Thus, communicating consistently, transparently, empathetically, and proactively about uncertainty, risks, and vaccine availability will contribute to building trust.
- **Go according to safety studies:** It would be wise for India to go by safety studies (Phase I, and II), and assessment of virus neutralisation tests with the serum, and it is also not right to doubt the reliability of the expert committee advising the Drugs Controller General of India (DCGI).
- **Monitoring vaccinated individuals:** Vaccinated individuals should be monitored regularly, and no particular vaccine candidate should be favoured.
- **Efficacy data:** In order to get provisional efficacy assessment, trial of one or two months could have given partial data. Real data on efficacy could be obtained only after vaccinating the masses.

India-UK in a Post Brexit world

Syllabus: Bilateral, regional, and global groupings, and agreements involving India, and/or affecting India's interests.

In News: India invited the UK PM Boris Johnson as chief guest for the Republic day celebrations. However, due to pandemic the visit was called off. This requires a deeper understanding of the India-UK relationship.

Background:

Brexit is an abbreviation for British Exit from European Union. Britain for its economic, and political reasons joined the European union in 1973 which was formed back in 1957.

Brief History of UK-EU relations

- 1957: France, West Germany, Belgium, Italy, Luxembourg, and the Netherlands signed the Treaty of Rome, establishing the European Economic Community (EEC).
- 1973: UK enters the European club
- 1993: The Maastricht Treaty created the Brussels-based European Union (EU) and renamed itself as the European Community (EC).
- 2013: Then PM David Cameron promises a referendum for the membership of the EU.
- 2015: The Conservatives win the election, and the referendum resulted in 52 percent Britain's voting to leave the EU.

India, and Britain share an exceedingly long historical, cultural, economic, and political relations. After Independence, India remains part of the Commonwealth, and it has played a crucial role in shaping India Britain relationship.

For decades, India-UK relations are not up to the potential. This was because neither side was invested in truly understanding what the other valued. The Brexit will provide a new opportunity and space for both countries to revitalize their relations. The Brexit will impact India in the following way:

Positive Impact:

- **Strategic, and Political relations:**
 - The strategic partnership between the two countries signed in 2004 and upgraded in 2013 but two sides underscored the potential of the agreement. The Brexit will provide opportunity to strengthen the ties at multiple levels.
 - Both sides have institutionalised dialogues in the areas of counterterrorism, cybersecurity, West Asia, Afghanistan, East Asia, UN, and multilateral issues, disarmament, and non -proliferation, and consular, and visa matter.
 - **UK sees India sort of post-Brexit lifeboat.** Britain, and India could work in concert, and to mutual benefit.
 - The UK government “**Graduate Route**” initiated for mutual benefit for UK, and International Students (with a special mention of India). It is expected that various such reforms will be made for students, and skilled workers after Brexit.
 - India has **multifaceted cooperation in the defence sector with UK**, and we have institutionalised defence dialogue at Defence Secretary level. Post-Brexit UK will

recalibrate its moves; the New Delhi has opportunity for indigenous defence development through Make in India.

- Both the countries signed a Civil Nuclear Cooperation Declaration in 2010. But cooperation was minimal due to complexity in export licence of technology, and material. The Brexit will develop Government-to-Government Assurances.
- **Economic relations**
 - **Trade:** The stringent non-tariff regulations of the EU which have been an obstacle to enhanced economic interdependency. For example, the EU using phytosanitary measures for banning of alphonso mangoes from India. In the absence of such regulations, the trade will prosper.
 - **Weakening of currency:** The weakening of pounds as a result of Brexit will be advantageous for Indian service imports. Ex- Indian tourist, and Indian students studying in the UK.
 - **More immigration:** The merit based immigration policy of the UK will favour Indians as compared to other European nations.
 - **Benefit to Indian companies:** There are 842 Indian companies in the UK. Companies will benefit post Brexit because the UK has lenient Labour laws, and lower corporate tax compare to Europe.
 - **Free Trade Agreement:** With the UK being among the largest source of foreign direct investment to India, the Brexit deal will have a significant ripple effect back in India, while the Brexit paves way for a free trade agreement (FTA) between India, and UK. Both sides agreed to establish 'Enhanced Trade Partnership', which is the first step towards a free trade agreement.
 - Key opportunities for Indian companies post-Brexit could arise in the food, and agro products sector, since the UK is a net importer of food, and food products from the EU
- **Science, and technology**
 - Post Brexit reinvigorates its Joint investment in UK-India research. For instance, The UK-India Newton-Bhabha programme, and collaboration, spanning areas such as digital, trade, investment, finance, climate change, defense, cybersecurity, and education; the underlying driver is the role of technology across all these areas.
- **Cultural, and Diaspora Relations**
 - Post Brexit liberal migration policy, and gradual mainstreaming of Indian culture will improve further the role of Indian Diaspora, and Soft power of India.

Negative Impact:

- **Economic relations**
 - **Indian Businesses in disadvantage:** Indian companies have their manufacturing units in UK, and have been successfully exploiting the EU market access. This may change post Brexit, as they may find it hard to access the single market of EU. The added import duty would make their product uncompetitive vis a vis EU. Therefore, UK will no longer be the gateway to the European Union.

- **Service Industry:** UK accounts for 17-18% of India's IT export. The Brexit could cause an extra overhead cost. We can expect considerable fall in demand of IT services impacting our capital account, and service based foreign exchange. NASSCOM report has mentioned a negative influence in short term due to Brexit. Tourism would also be affected due to decline in tourists flow into India from Britain due to weakening of the pound
- **Immigration:** After Brexit, it is expected that there will be more restrictions on immigration in the United Kingdom thus affecting Indian immigrants.
- **FDI:** India is the third-largest source of FDI for the UK. There are more than 800 Indian companies in Britain. Brexit will affect the flow of Foreign Direct Investment (FDI) to Britain, and from Britain to India.
- **Weakening the rupee:** UK, and EU together account for 23.7% of the rupee's effective exchange rate. The outflow of Portfolio investments may further weaken the rupee.
- **Bilateral renegotiations:** The renegotiation of economic relations can cause financial instability. It is a time taking process which can prolong the financial vulnerability. Ex- India- Japan took 5 years to negotiate bilateral free trade agreement.
- **Deglobalisation:** Brexit in general has been a blow to interdependence, and institutionalised globalisation. This may have domino effect on other trading blocs.
- **Indian sees Britain as its gateway to Europe:** the Brexit will have negative economic effect on Indian companies.

Challenges in India-UK relations

- **Stagnant relations:** India-UK relations have been stagnant for the past five years due to Brexit negotiations. The relationship has failed to progress, despite summit level meeting by PMs.
- **Peripheral Issues:** UK turning to be haven for economic offenders has been allowed to dominate the narrative like Vijay Mallya, Lalit Modi, Nirav Modi.
- **Interference in internal affairs:** Britain's willingness to tolerate "anti-India activity." Ex- Rally to commemorate the first death anniversary of Burhan Wani, Pro-Khalistan rallies. There have been sharp reaction protests at the Indian High Commission in London over the Article 370, and the Citizenship (Amendment) Act. UK's concerns about the farmers' protests have also raised concerns on interference on internal matters.
- **The dispute between the UK, and Mauritius over the sovereignty** of the British Indian Ocean Territory spanner in the works for the UK-India relationship.
- **Diaspora involvement:** Interest of British Indian diaspora makes Indian politics a factor in British politics. Ex- Raising the issue of farmer protest in British Parliament
- **Visa Issue:** U.K. excludes India from relaxed student visa rules, which

Way forward:

- India needs to persuade the UK to achieve global aspirations for a permanent seat in the UN Security Council, and membership in the Nuclear Suppliers Group.

- Post Brexit, and pandemic will make difficult for global revival growth; there is a need for India to focus more on the domestic demand so that the impact is minimized.
- SEBI, RBI, and other institution need to strengthen their role to minimize Brexit impact. For instance, strong forex reserves position has to be maintained so that any fluctuations in the exchange rate of the rupee can be limited.
- India can work with UK to achieve its ambitions in urbanization, digitalization, and skill development. There is scope for collaboration in areas of education, science, and creative industries etc.
- India, and European Union Free Trade Agreement (FTA) stalled for several years. Post-Brexit India will have opportunity to conclude FTA directly with UK.
- Most importantly, this is a time to ensure Britain is not seen as drawing up the draw-bridge to global talent. There is immense untapped potential in India, and the UK striking partnerships to work together in other growing markets in Africa. It is important India offers the way forward amid some of the doom, and gloom unleashed by Brexit.

GENERAL STUDIES-3

Regulating Shadow Banks

Syllabus: Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment.

In News: Reserve Bank of India (RBI) has proposed a tighter regulatory framework for non-banking financial companies (NBFCs) by creating a four-tier structure.

More in News

- IL&FS crises 2019 whose debt amount upto Rs. 91,000 crores.
- Covid-19 outbreak: NBFCs face twin challenges of debt repayment, cash shortage.

Introduction

The NBFCs are established under the Companies Act, 2015. They are primarily governed by Reserve Bank of India (RBI), except for some NBFCs which are governed by other statutes or relevant institutes, for instance:

- The insurance companies are regulated by the Insurance Regulatory and Development Authority (IRDA);
- Venture Capital and stockbroking companies are regulated by the Securities and Exchange Board of India (SEBI);
- Nidhi companies by the relevant provisions of the Companies Act;
- Stock Exchanges, Mutual Benefit companies, and Chit Fund companies by the Chit Funds Act 1982.

It is engaged in the business of loans and advances, acquisition of shares/stocks/bonds /debentures/securities issued by Government or local authority or other marketable securities of a like nature, leasing, hire-purchase, insurance business, chit business.

It does not include any institution whose principal business is that of agriculture activity, industrial activity, purchase or sale of any goods (other than securities) or providing any services and sale/purchase/construction of immovable property.

NBFCs vs BANKS:

Point of difference	NBFCs	Banks
Regulated By	Companies Act, 1956	Banking Regulation Act, 1949
Deposits	Only NBFC-Ds can accept time deposits but not demand deposits. (for eg- they cannot issue demand drafts)	Accept time and demand deposits.
Cheques/Debit and Credit Card	Cannot issue.	Can issue.
Cash Reserve Ratio (CRR)	Not Applicable	Applicable
Statutory Liquidity Ratio (SLR)	Applicable on NBFC-Ds(It depends on the norms prescribed by RBI.)	Applicable
Deposit Insurance Facility	Not available	Provided by Deposit Insurance and Credit Guarantee Corporation
BASEL norms	Applicable on the following: NBFC-Ds NBFC-ND-SIs But the deadlines and the norms would be prescribed by RBI.	Applicable
Grievance Redressal	RBI's separate ombudsman for NBFC-Ds.	RBI's Ombudsman. Bank's Internal Ombudsman.

What are the major fund sources for the NBFCs?

- **Long Term**
 - Long term loans are offered by banks and insurance companies. For raising large sums at a competitive interest rate, a good credit rating becomes mandatory. Bonds are another way of raising long term loans which are raised at a reduced interest rate.
- **Short Term**
 - Commercial Paper, debentures and intercorporate deposits are issued as short-term loans for NBFC.

Significance of NBFCs in India

- **Financial inclusion:**
 - Innovative financial services for better outreach;
 - Lend to people with less tangible asset or no credit history;
 - Attractive destination for savings of middle class.

- **Issues with bank**
 - Formal and rigid nature of lending by banks;
 - Increased Non-Performing assets of banks and thus lending crunch to NBFC.
- **Provide Credit**
 - Provide loan for projects with long gestation period like Housing or power sector.

Challenges faced by NBFC's In India

- **Asset-Liability mismatch** - India doesn't have Development Finance Institutions (DFIs) to fund its long-term projects. NBFCs cater to the credit needs of these long gestation infrastructure projects. But the NBFCs rely on raising short-term funds and then lending it as long-term loans. This leads to a situation of an Asset-Liability Mismatch.
- **Lack of funds** - In India, around 11400 NBFCs are non-deposit taking while only 200 are deposit taking. Thus, NBFCs do not have access to cheap funds. They do not have deposit insurance provided by Deposit Insurance and Credit Guarantee Corporation like the banks. RBI does not act as a 'lender of last resort' for the NBFCs.
- **Lack of defaulter database** - NBFCs are susceptible to credit risk due to the lack of vital information. Additionally, there is a need to bring the essential legislative amendments in order for these companies to leverage the utility payments database in the credit assessment process.
- **Overdependence on PPP model** - Companies taking loan from NBFC can become overly dependent on PPP model. Increased litigation in such models and lack of contract enforcement leads to delaying of projects and thus credit gets blocked.
- **Credit Rating Agencies** - These agencies give rating on basis of Issue pay model which may lead to collusion between NBFC and agency for better rating.
- **Several representative bodies** - Currently, there are a number of representative bodies. Therefore, setting a single representative body could be an ideal thought. It is also vital that every segment is represented adequately in the apex body that facilitates the balanced growth of NBFCs.
- **Governance issues** - Since NBFC can have multiple subsidiaries thus there may be cases of opacity in functioning and lack of transparency. Also, they are not in purview of RBI regulations.

Steps taken by Government

- RBI has introduced four tier structures for NBFC regulation:

Objective: It is to keep the big NBFCs in good financial health.

Four Tier Structure:

- **Base layer:** This layer will include the large number of small NBFCs in the country and will be subjected to least regulation. It is because they have a limited impact on systemic stability. The proposals for this set of NBFCs include:
- **Entry-level** net owned funds required to be raised to Rs 20 crore from Rs 2 crore.
- NPA classification norm of 180 days will be harmonized to 90 days.
- Disclosure requirements will be widened by including disclosures on types of exposure, related party transactions, customer complaints.

Middle Layer: It will consist of NBFCs that currently fall in the 'systemically important' category along with deposit-taking non-bank lenders. **Housing Finance Companies, Infrastructure Finance Companies, Infrastructure Debt Funds, Core Investment Companies.** The proposals for this set of NBFCs include:

- It will be subjected to tighter corporate governance norms.
- No changes proposed in the **capital-to-risk-assets ratio (CRAR)** of 15% with a minimum Tier-I ratio of 10%.
- These NBFCs cannot provide loans to companies for buy-back of securities.
- NBFCs with 10 or more branches will be required to adopt core banking solutions.

Upper Layer: It will include about 25-30 NBFCs and will be subjected to bank-like regulation.

- It will have to implement differential standard asset provisioning and also the large exposure framework as applicable to banks.
- The concept of Core Equity Tier-1 will be introduced for this category and is proposed to be set at 9%.
- They will also be subject to a mandatory listing requirement.

Top Layer: This layer will be empty for now and will be populated with NBFCs, where the RBI may see an elevated systemic risk.

- RBI conducted Targeted Long-term Repo Operations (TLTRO 2.0) for an aggregate amount of Rs 50,000 crore. RBI stipulated that small and mid-sized NBFCs and Micro Finance Institution should receive at least 50% of these funds.
- New rules of IBC have allowed that NBFC can also be taken to NCLT under Insolvency and Bankruptcy code.
- Credit rating agency – SEBI issued guidelines to improve the quality of disclosures made by such agencies.

Way Forward

NBFCs would continue to play a quintessential role in the country's growth story. With a size of around \$0.4 trillion, the sector's potential cannot be ignored, considering the paramount role it plays in promoting financial inclusion and putting the Indian economy on the path of continuous advancement.

- **Regular audits** - Carrying out regular inspections and audits of NBFCs and cancelling the licenses of those who do not comply with the norms. For instance - RBI cancelled the licenses of 1,701 NBFCs in FY 2019.
- **Identifying social base** - More emphasis needs to be laid on microfinance institutions. The NBFCs need to identify their target clients, assess whether they are able to reach them and ascertain where they lie in the matrix and work accordingly.
- **Partnership for growth** - Cross institutional and industrial learning should be promoted, so that best practices are replicated everywhere and default risks are minimized.

Preventing Agro Brain Drain

Syllabus: Indian Agriculture

In News: Vice President M. Venkaiah Naidu has called for measures to prevent **agro brain drain** and attract educated youth to take up farming as a profession. In this regard, the state of agricultural education is bound to play a primary role in attracting youth towards agriculture.

More from the Vice President's speech

- Vice President Naidu said that agriculture is the pillar of India's ecology, culture and civilization.
- He also called for changing focus from food security to nutrition security.
- The Vice President stressed on the need to reduce agri-input costs and called for promoting organic farming in a big way.
- He emphasized that organic farming is beneficial for all stakeholders including the farmers, the consumers and the environment. He called for making organic agriculture a mass movement not only for a 'wealthy nation' but also a 'healthy nation'.

What is agro brain drain?

Agro brain drain is trend where Indian youth have become averse to take up agriculture as a profession or a career option. The ASER survey of 2018 showed that only 1.2% of the surveyed youth aspired to be a farmer.

Challenges in preventing agro brain drain

- **Non remunerative Agriculture:** The youth were not interested in agriculture because of the falling revenue, rising input cost and decline in profitable farm holdings.
- **Difficulty in attracting talented rural and urban youth:** Attracting youth to the agriculture sector becomes a challenge due to low returns, poor quality of education and limited career opportunities.
- **Shortage of competent faculty:** There exists a high number of vacancies, especially in disciplines like Agricultural Economics, Agricultural Meteorology, Agricultural Statistics etc. Also, agricultural institutions provide limited opportunities for faculty to improve and update their knowledge.
- **Deteriorating Condition of SAU (State Agricultural Universities):** Lack of significant efforts by states have led to deteriorating conditions in some SAUs.
 - Since agriculture is a state subject, central bodies such as the Indian Council of Agricultural Research (ICAR) can play only a facilitating role.
- **Inadequate funding support:** Over the years, increase in the level of public finances of the states to the agricultural universities has been far below their requirements in the context of contemporary needs of higher agricultural education.
- **Integrating Agricultural Education with job creation:** Due to absence of a creditable system of assessment of job profiles and skills needed in the sector, agricultural graduates in various streams often find difficulty in accessing gainful employment.
- **Outdated curriculum:** Curriculums of Agricultural universities have not been changed keeping in view the advances in science and technology. This has been noticed in agriculture sector in general and in allied sectors in particular. The curriculum doesn't cater to the changing economic status, life styles, food habits and demand for processed/value added foods.

Unless agriculture is made remunerative and attractive, it would be difficult to retain youth in this field. There is also a possibility of India losing the title of being the 'food basket of the world'. In order to retain youth in agriculture government has taken the following steps.

Government initiatives to retain youth

- **Attracting and Retaining Youth in Agriculture (ARYA):** The scheme aims to attract and empower the Youth in Rural Areas to take up various Agriculture, allied and service sector enterprises for sustainable income and gainful employment through skill development.
- **Dedicated Agriculture Education Portal:** It was developed as a single window platform for providing vital education information, e-learning resources etc. from Agricultural Universities across the country in an easy and fast way.
- **Student READY (Rural Entrepreneurship Awareness Development Yojana) programme:** It provides job based and entrepreneurial training to students and consists of – Experiential learning (Business Mode); Hands on training (Skill Development Mode); Rural Awareness Work Experience (RAWEX); In Plant Training/ Industrial attachment; and students projects.
- **National Agricultural Higher Education Project (NAHEP):** It is designed to strengthen the national agricultural education system in India with an overall objective to provide more relevant and high-quality education to agricultural university students.
- **International collaborations:** ICAR coordinates the India-Africa Forum Summit (IAFS), Indo-Afghan Fellowship Scheme etc. to support the agricultural human resource development in India.

Way Forward

The Vice President opined that the future of Indian agriculture lies in the hands of technology-driven farming practices, powered by well-informed and modern-minded farmers. The aim should be to make agriculture more attractive to the younger generation. The following suggestions can be taken into account:

- **Link social media to agriculture:** The youth in the farming sector can be directed towards re-routing innovation and technology into the agriculture sector by linking agriculture and social media.
- **Perception management:** The prospects of agriculture as a career should be made clear to the youth to engage them in the sector fields. The media, ICT and social media can all be used to cater the needs.
- **Updating course curriculum:** Agricultural education needs to keep pace with the changing agricultural scenario and developing technology and incorporate aspects of agro-business management and sustainable practices.
- **Strengthening agri-education:** Lack of quality training dissuades the youth from undertaking farming as a profession.
 - The academic curriculum needs to be linked with the practicality and the real-life challenges.

- It should be reoriented to focus on the research part and troubleshooting aiming at agribusiness and entrepreneurship.
- **Farmers-Researcher's linkage:** A robust agricultural education system can strengthen Farmers Researchers linkages through cooperation of the universities in streamlining the flow of knowledge and expertise from campus to agriculture fields.

We need multiple strategies that enhance the status of the young farmer in order to retain them in this sector. Like the slogan JAI JAWAN, JAI KISAN, we need to coin the slogan that farmer is also a soldier of Mother Earth protecting our soils and feeding the countrymen.

Sector Overview- Shipping

Syllabus: Infrastructure: Energy, Ports, Roads, Airports, Railways

In News: The Indian Ports Association (IPA) has appointed M/s Tech Mahindra as the Managed Service Provider for the five major ports at Mumbai, Kolkata, Chennai, Deendayal Port Kandla, and Paradip Port Trust.

Introduction

- There is a lot of potential of shipping as a contributor to economic growth and many economies of the world have understood this. For example, china is trying to control the Indian Ocean region and the Bay of Bengal because control of the seas is a key component of China's Belt and Road Initiative (BRI).
- According to the World Shipping Council seven of the top 10 container ports in the world are in China even when China has a coast only in the east.
- Strong merchant marine and infrastructure to transport and handle merchandise all over the world helped China's growth.

Regulatory Scenario of ports in India

- **Indian ports act:** All Indian ports are regulated under the Indian Ports Act, 1908. This Act defines the jurisdiction of central and state governments over ports, and lays down general rules for safety of shipping and conservation of port facilities.
- **Major Ports:** Major ports are under the jurisdiction of the Government of India and are governed by the Major Port Trusts Act 1963, except Ennore port, which is administered under the Companies Act 1956. The ports act as semi-autonomous bodies under the administrative wing of the Ministry of Shipping.
- **Minor Ports:** Non-major ports come under the jurisdiction of the respective state Governments' Maritime Boards (GMB).

Key Policy Developments:

- **The Major Ports Authorities Act, 2016:** The Act provides greater autonomy and flexibility to major ports. It repealed the Major Port Trusts Act, 1963. The key features of the act include
- **Amendments to Model Concession Agreement (MCA):** Approved in 2008, MCA governs the functioning of Major Ports with respect to PPP projects. In January 2018, the government approved amendments in the MCA to make the Port Projects more investor-

friendly and make investment climate in the Port Sector more attractive. Some key features include:

- Constitution of the Society for Affordable Redressal of Disputes – Ports (SAROD-PORTS) as dispute resolution mechanism,
- Introduction of Complaint Portal for the use of port users etc.
- **Sagarmala Project:** The programme aims to modernize India's ports so that port-led development can be augmented and coastlines can be developed to contribute in India's growth. Major components of the project include:
 - Port Modernization & New Port Development.
 - Port Connectivity Enhancement
 - Port-linked Industrialization
 - Coastal Community Development
- **Project Unnati:** It has been started by Government of India to identify the opportunity areas for improvement in the operations of major ports. Under the project, 116 initiatives were identified out of which 86 initiatives have been implemented (as of March 2018)
- **National Maritime Agenda, 2010-2020:** The major objectives include:
 - increasing the port capacity,
 - implementing full mechanisation of cargo handling and movement at ports,
 - developing 2 major ports (1 each on East and West coast) to promote trade as well as 2 hub ports (1 each on the West coast and the East coast) – Mumbai (JNPT), Kochi, Chennai and Visakhapatnam
 - Establishing a port regulator for all ports in order to set, monitor and regulate service levels, technical and performance standards.

Issues and Challenges with Indian Ports:

- **High turnaround times:** Ports in India suffer from high turnaround times for ships. For example, in Singapore, average ship turnaround time is less than a day. However, in India, it is over two days.
- **Port congestion:** Port congestion due to container volume, shortage of handling equipment and inefficient operations is a major concern.
- **Sub-optimal Transport Modal Mix:** Lack of requisite infrastructure for evacuation from major and non-major ports leads to sub-optimal transport modal mix
- **Limited Hinterland Linkages:** There is inefficiency due to poor hinterland connectivity through rail, road, highways, coastal shipping and inland waterways. This in turn increases the cost of transportation and cargo movement
- **Lengthy inspection and scrutiny:** Though customs operations in India are rapidly going paperless and converting to digital, inspections and scrutiny continue to be lengthy for cargo and other shipping operations.
- **Inadequate infrastructure and Technology Issues:** Lack of adequate berthing facility, number of berths, sufficient length for proper berthing of the vessels at the Non-Major Ports is another problem.

- Draft is also a major limitation in India as terminals and ports are unable to cater to vessels beyond Panamax (Draft over 13 meters) size that are increasingly dominating global trade.
- Many ports also lack adequate navigational aids, facilities and IT systems.
- **Issues with Regulations:** The major problem with regulation is that major and non-major ports fall under different jurisdictions. Further, the regulatory framework is rigid.
 - Cabotage laws in India continued to remain restrictive. Foreign-flagged vessels are not allowed to ship cargo from one Indian port to another as that remains a protected turf for domestic shippers.
 - Foreign carriers and their agents use EXIM trade to add huge hidden charges in the logistics cycle.
 - There is a huge void between carrying capacity and multi-folded cargo growth in India because members of maritime business community want to become agents for foreign ship owners instead of becoming ship owners themselves.
 - Regional cargo specific ports are not created in peninsular India, similar infrastructural developments in multiple cargo-handling ports instead. This results in Indian ports competing for the same cargo.
- **Issues with PPP Model:** Most port PPPs impose strict limits on what private operators are allowed to do, usually in terms of the types of cargo they are allowed to handle.
- **Discriminatory provisions for Indian vessels:** Foreign vessels are exempt from duty on bunker fuel while Indian vessels have to pay this duty.
 - Seafarers aboard Indian flag vessels are subject to Indian income tax while those working aboard foreign vessels are not subject to this tax.
- **Environmental impact:** During the operation of ports, spillage or leakages from the loading and unloading of cargo and pollution from oil spills are common due to poor adherence to environmental laws and standards.
 - The water discharged during the cleaning of a ship and the discharge of ballast water is a threat to marine ecosystems.
 - Dredging causes environmental problems (increased sedimentation) affecting local productivity of the local waters and its fisheries.
- **Social impacts of Port Development:** Most port projects and development results in displacement (such as Gangavaram Port in Andhra and Mundra in Gujarat).
 - Besides displacement, the other important concern expressed by fishing communities is the restriction of access to fishing grounds around a port.
- **Manpower and Labour Issues:** Lack of adequate training, falling manpower quality, opposition to reform are major issues.
- **Unhealthy Competition:** Analysts have cited the concerns over development of multiple ports in close vicinity handling similar cargo as it might lead to ports competing for the same cargo arrivals.

Major Committees and Recommendations

- **Vijay Kelkar Committee on PPP:** With regards to ports, the committee recommended review of role and need of Tariff Authority for Major Ports (TAMP), review of MCA, quicker clearances, rationalized leases and stamp duties.
- **NITI Aayog in its Three-Year Action Agenda (2017-2018):** It recommended the following:
 - Increase competition through easing cabotage.
 - Increase the capacity of and eliminate discriminatory provisions for Indian vessels.
 - Explore creating deep-water ports or barges for ports with low drafts.
 - Facilitate minor/non-major port connectivity to hinterland areas.

Way Forward:

- **Boost foreign investments:** Environmental clearances, Tariff norms, land acquisition etc. need to be standardized and implemented for the port sector so as to boost foreign investments.
- **Operational efficiency:** Priority should be given on expanding capacity and improving operational efficiency. Emphasis should be placed on installing advanced cargo handling processes, scalability in processes and mechanisation of port operations.
- **Flexible regulatory regime:** The regulatory regime should be made less complex and less rigid. Further, there should be vertical integration of all stakeholders (for example: environment, rail/road transport etc.) for holistic development of ports in India.
- **Port modernisation:** New port development, port connectivity enhancement, port-linked industrialisation and coastal community development under the Sagarmala project has an immense scope for reduction in transportation and logistics costs and boosting export competitiveness.

Managed Service Providers (MSPs):

- Managed Service Providers, are market players in the specific domain that handle specialized business functions on the behalf of a company through outsourcing.
- It is intended to be an efficient way to stay up-to-date on technology, have access to skills and address issues related to cost, quality of service and risk.
- In 2018, Indian Ports Association appointed M/s Tech Mahindra as the Managed Service Provider for the five major ports at Mumbai, Kolkata, Chennai, Deendayal Port Kandla, and Paradip Port Trust.
- Managed Service Provider for Port Enterprise Business System for Five Major Ports.
- This initiative is a major step towards integrating the maritime sector and fostering growth and development of major public sector ports in the country.

The key benefits from the system in Port and Shipping sector include:

- Improve India's ranking in Ease of doing business.
- Enable faster request processing in delivery of services with better turnaround time.
- Reduction in manual intervention/documentation required.
- Reduction in overall Transaction time and costs.
- Improve the efficiency of port operations, quick turn round of vessel and subsequent less dwell time.

- Dashboard to ports/MOS for Real Time MIS on cargo/ship movements & Exim transactions.
- Simplified and accelerated procedures for cargo entry, exit or transit.
- Enhanced transparency across systems.

Gated Globalisation

Syllabus: Effects of liberalization on the economy

In News: Post pandemic era will be giving rise to new world order and create uncertainties. India should use a “Gated Globalisation” framework to handle this change.

Introduction

- The COVID-19 pandemic has increased uncertainties and also challenging the status quo leading to rise of new powers.
- The 3rd decade of the 21st century will witness a **multipolar world** and the rise of this New World Order will be **driven by reliability of partners, national interest, and economic factors**.
- New developments are being witnessed with the development of vaccines. Nations are forging alliances for the vaccine supplies. **Trust factor** will also dominate these alliances as seen in the doubts raised over vaccines by China and Russia and this factor will not be limited to vaccines only.
- Although security interest will continue to drive partnerships, it will not be the sole criterion as seen in the Israel and Arabs relations and BREXIT.

Globalisation and its trends in recent times:

Globalization is the **process of interaction and integration** among people, companies, economies and governments worldwide. Globalization has accelerated since the 18th century due to advances in transportation and communication technology. In the recent time the pace of globalisation has lessened due to:

- **Global slowdown:** the trend of slowing world trade and growing protectionism has continued and the pandemic made it worse.
- **US-China tariff war:** US former President's imposition of tariffs on China resulted in the US-China trade war.
- **Supply chain disruption:** Global supply chains are undergoing a radical transformation due to **rising economic nationalism** across the world which is resulting into significant **geopolitical shifts**.
- **Asia ascending, U.S. waning:** The 2008 financial crisis showed the resilience of the Asian economies, and even today, economic forecasts indicate that out of the G-20 countries, only China and India are likely to register economic growth during 2020. This is also changing the notion of one size fits all.
- **Intra-European fission:** the European Union's continuing preoccupation with internal challenges generated by its expansion of membership to include East European states and the financial crisis has also reduced role of EU in strengthening globalisation.

- **Fading organisations:** the role of multilateral organisation such as WHO, UN and WTO are decreasing and in the absence of effective multilateral response has reduced globalisation.

Is the Chinese expansionism similar to the pole position once occupied by the USA?

The US had leveraged its pole position in the global economy, its military and industrial strengths, and its technological supremacy to build a world order that responded to its interests. Similarly, China's expansionism is centred around the following:

- **China's new supply chains:** China is expanding outward through the construction of new supply chains by capturing the flow of raw materials from Asia and Africa and supplying finished products to the world. For example. Belt and Road initiative.
- **China's tech pathway:** The second aspect of china's expansion relates to technology. For example, its concerted effort to control and leverage the global data.
 - It is globalising its technological prowess and building next-generation communications infrastructure and digital platforms which may help in developing surveillance tools for the Chinese governments.
- **China's positioning:** Externally, Beijing is well-positioned to script future administrations and regimes around development, finance, and even war and conflict. While internally it does this even as it isolates its own people from external flows of information and technology.

There is, however, no equivalence between the two. US society was largely open individuals, communities and nations from around the world could engage, convince or petition its institutions; write in its media; and, often, participate in its politics. Its hegemony was constrained by a democratic society and conditioned by its electoral cycles.

Gated globalization framework and India:

Gated Globalisation requires India to protect its interests with strong fences and new partnerships based on trust and common interests.

- **Economy:** Gated globalization advocates selective trade policies with selective trade partners like creating walls with restrictive gates, opened on certain conditions.
 - India will have to make partnership choices, beyond security, on the basis of trade, capital flows and the movement of labour.
 - For instance, India has chosen to stay out of RCEP and the UK has left the EU.
- **Maintaining strategic autonomy through alliances:** The Gated Globalisation framework doesn't have a place for "Non-alignment" and will be a test of "strategic autonomy" of India.
 - India needs Solid boundaries but building new partnerships (like the Quad) based on trust and common interests is equally important, as necessitated by Doklam and Ladakh clash with China.
 - India has shed the non-alignment policy in practice. For example, QUAD Security architecture and Indo Pacific paradigm.

- **Science and technology:** technology flows and standards will also define gated communities. The Great Firewall of China has shut out many of the big tech players like Google, Facebook and Netflix. Instead, China has its Baidu, Alibaba and Tencent. The introduction of 5G technology, will deepen the issues of trust.
- **Data:** the EU-crafted General Data Protection Regulation (GDPR) is a brilliant example of Gated Globalisation. The EU has set the terms of engagement; those who do not obey will be kept out. The Indian law on data protection that is currently being discussed follows a similar sovereign route.
- **Controlling financial relations:** India and other countries have similar policies where they put restrictions on trade with nations that are unfavourable to their interest and build stronger financial relationships with other countries within their gated communities.
 - For instance, India has imposed restrictions on trade with China but this does not stop enhanced capital flows from new partners. To prevent the inflow of illegal funds, India has barred capital from poorly-regulated authorities.
- **Capital flows:** India's global scattering is now over 30 million and sends more through transfers (\$80 billion per year) than foreign capital inflows. The Indian diaspora is now increasingly impacting policy in countries like the US, UK and Australia where it has contributed politicians and technocrats, innovators and influencers, billionaires and cricket captains.

Way forward

- During these fast-changing post-pandemic realities, India has to be quick in identifying partners whom it can trust and who will help protect and further its national interests.
- The next globalisation era underwritten by Beijing, may well be less free and less open than before. To balance China's global ambitions, nations may opt to trade with geographies and nations where political trust exists, thereby fragmenting supply chains.
- Governments need to 'gate-keep' flows of goods, services, finance and labour when national strategic interests are at stake.
- Indian companies need to re-look at their supply chain and start building domestic capacity for essential products to reduce dependence on China.
- Support needs to be provided in the form of limited, sector-specific, and focused protection to industries.

Economics of Digitalization

Syllabus: Science and Technology- developments and their applications and effects in everyday life Achievements of Indians in science & technology; indigenization of technology and developing new technology.

In News: Internet Services' base payment system is worsening the financial exclusion prevalent in rural India. This requires an analysis of digital economy in general and of rural areas in particular.

Background:

- **Cashless economy:** The use of mobile wallets and online transactions spiked since demonetisation. It decreased reliance on liquid money. Most of the transactions are done by cards or by digital means. Use of e-commerce, mobile banking or Internet banking further shows the rising digitalization across sectors.

Meaning of Digitalization: Digitalization means the process of making everything digital that can be digitized and the process of converting information into digital format.

- **State of digitalization in rural India:** Internet services have provided much comfort to the user. But for the majority of the rural population digital technology has become troublesome due to a lack of technical knowledge and nexus of service providers, middlemen, government officials, and others.
- **State of digitalization in India:**
 - **Digital Consumers:** India is one of the top three global economies with respect to the number of digital consumers. As per Indian telecom services performance indicators released by TRAI, India had 560 million internet subscribers in 2018.
 - **Digital Adoption:** India has the second-fastest rate of growth of digital adoption among mature and emerging digital economies (which includes Brazil, China, USA, Russia etc), as per TRAI. The adoption of public digital platforms like Aadhar, UPI have led to the faster digital adoption.
 - **Narrowing the digital divide:** Indian telecom services performance indicators released by TRAI has also indicated the bridging of the regional digital divide by following findings:
 - India's digital divide is narrowing fast as less affluent states are fast catching up with more affluent states.
 - Between 2014 and 2018, 7 out of the 10 states with the highest rate of growth in internet subscriptions had per capita GDP lower than India's average.

Digital Economy: Components

Digital economy refers to an economy based on digital technologies connected through the internet.

The different technologies and economic aspects of the digital economy can be broken down into three broad components:

- **Core aspects of the digital economy:** It comprises of fundamental innovations (semiconductors, processors), core technologies (computers, telecommunication devices) and enabling infrastructures (Internet and telecoms networks).
- **Digital and information technology (IT) sectors:** It comprises of sectors that produce key digital products or services (e.g- digital platforms, mobile applications and payment services).
- **Digitizing sectors:** It includes sectors where digital products and services are being increasingly used (e.g., for e-commerce). It also comprises of sectors such as finance, media, tourism and transportation, where digital technologies are transforming the way

processes operate. Further, digitally literate workers, consumers and users are crucial for the growth of the digitized economy.

How has the digital payment-based solution benefitted rural India?

- **Direct Benefits Transfer (DBT):** It was launched with an aim of improving financial inclusion in 2011. Since 2015, it has become synonymous with the Aadhaar Payments Bridge Systems (APBS).
- **Various programmes:** Money is transferred to the various beneficiaries of programs under DBT such as maternity entitlements, student scholarships, and wages for MGNREGA.
- **Customer service points:** To deal with the “last mile challenges” facing beneficiaries in accessing their money; banking kiosks, known as Customer Service Points (CSP) and Banking Correspondents (BC), were promoted.

However, it doesn't solve the basic issues that are being faced by the lower strata of the rural areas in receiving their own money from their bank accounts.

What are the issues faced by rural population in accessing their payments?

- **Lack of technical knowledge–** Workers have little clue about where their wages have been credited and what to do when their payments get rejected, often due to technical reasons such as incorrect account numbers and incorrect Aadhaar mapping with bank accounts.
- **Lack of accountability:** State governments have not set any accountability for APBS and AePS/payment intermediaries and there is no grievance redressal mechanism for the same.

Findings of the new report by LibTech India

- **LibTech India:** They recently released a research report based on a survey of nearly 2,000 MGNREGA workers across Andhra Pradesh, Jharkhand, and Rajasthan. The survey explains the experiences of workers in obtaining wages in hand after they were credited to their bank accounts.
- **Access to wages from banks becomes arduous–** Rural banks are short-staffed and tend to get overcrowded. Hence, it requires more hours and multiple visits to access wages from banks.
- **Technical issues–** CSP/BCs appeared to be a convenient alternative to banks due to their proximity. However, an estimated 40 per cent of them had to make multiple visits to withdraw from CSPs/BCs due to biometric failures.
- **Too much travel cost is involved–** To get their DBT share, MGNREGA workers need to spend too much for travel leading in addition to loss of their daily wage on the day of travel. E.g. **the average travel cost for one visit to a bank in Jharkhand is Rs 50 which becomes Rs 100 for two bank visits.**
- **Passbook related issues–** The only way for rural bank users to keep track of their finances is through their bank passbooks. However, more than two-thirds of time workers were denied the facility to update their passbooks at banks, some workers are even charged **(45 per cent in Jharkhand)** for this free service by CSPOCs.

- **Lack of consultation**– The workers/beneficiaries have rarely been consulted regarding their preferred mode of transacting.
- **Creation of new forms of corruption** – All the above factors have resulted into new form of corruption. For Example; Massive scholarship scam took place in Jharkhand, where many poor students were deprived of their scholarships owing to a nexus of middlemen, government officials, banking correspondents and others.

DIGITAL ECONOMY: A SWOT ANALYSIS

- **Strengths:**
 - **Convenient Mode of Payment:** Digital economy provides an ease of transaction to the customers. It further offers other benefits, such as reduction in transaction cost of carrying and doing transactions in cash.
 - **Lower Risk:** With proper cybersecurity, online payment is relatively risk-free, whereas there are always safety issues with physical cash.
 - **Reduction in the Cost of Printing Money:** Printing of new currency notes and replacement of soiled and mutilated currency notes involves cost. For instance, in 2015, printing currency cost the RBI Rs 27 billion. Thus, the cost can be reduced if the economy moves towards a digital economy.
 - **Decrease in crime rate:** Many illegal activities like drug trafficking, prostitution, financing of terrorism and money laundering are carried out only in cash. A digital economy will make it difficult to carry out such operations.
 - **Good for the Banking Sector:** A digital economy will help the banking system. Once people get used to digital payment and transfers, there would be less demand for cash holding. Thus, this would leave more cash in the banking system and thereby enable more savings.
 - **Economies of scale:** Interconnected networks in the digital economy would allow information flows across and between the networks. This would enable economies of scale due to fixed infrastructure costs of installing the networks.
 - **Availability of e-services:** Digital platforms that enable real-time data updates, would increase accountability and facilitate monitoring, quality checks and timely intervention by the higher administrative authorities.
- **Weakness:**
 - **Poor quality internet:** Internet access is the backbone of a vibrant digital economy. However, it is plagued by issues related to quality and reliability, call drops and weak signals.
 - Existing networks have been strained further by limited spectrum availability and usage, affecting the provision of quality services.
 - **Digital access and literacy:** A vast number of Indian populations does not have access to devices such as laptops, computers, smartphones, etc.
 - As per the NITI Aayog Strategy document, digital literacy in India is estimated to be less than 10 percent of the population.

- **Skill gaps:** Digital economy would require competent professionals with adequate skills to take the lead. However, India has been lacking in it.
 - For instance, A NASSCOM report has pointed out an employee deficit of around 1.4 lakh jobs in the Artificial Intelligence (AI) and Big Data Analytics segment across various sectors in India, which is expected to increase to 2.3 lakh by 2021.
- **Digital gender gap:** According to a study released by LIRNEAsia, an information and communications technology (ICT) policy think tank, India has the highest gender gap in mobile phone and 3rd highest in access to the Internet.
- **Access to power:** Uninterrupted access to power is essential for a digital economy to function efficiently. For instance, blockchains require a substantial, reliable electricity supply for proper functioning.
- However, around 22% of rural households across the country still do not have access to electricity.
 - **Non-compliance with the IT Act, 2000:** Digital payment service providers are an important part of the digital economy. However, a majority of them do not comply with the provisions set by the IT Act, 2000 for dealing with financial data of customers.
 - Further, the IT Act lacks measures to deal with cases if the consumers lose money.
 - Develop inequality: The influx of frontier technologies of the digital economy may create inequality within the various regions of India. For instance, the deployment of 5G may further increase the urban-rural digital divide, as setting up 5G networks in rural areas with lower demand will be commercially challenging.
- **Opportunities:**
 - **Improve the ease of operations:** Transition to a digital economy has the potential to reduce the operational costs of businesses. For instance, adhering to the compliance requirements in a digital form would take minimal time.
 - **Data as a resource:** Data is the driving force behind all technologies of the digital economy. The transformation of data into useful information would aid better decision making.
 - **Financial Inclusion:** Digital economy provides scope to extend banking facilities to unserved and under-served areas through technologies such as mobile banking, common service centres etc.
 - **Tap the leakages:** Use of technologies to transfer subsidies of welfare schemes would help in stopping the leakages by making the process more transparent.
 - For instance, DBT of subsidies under the PAHAL scheme has helped identify and block around 3.34 crore duplicate accounts, helping save thousands of crores.

- **Black Money:** Digitisation of financial transactions helps in maintaining a digital record and trail of such transactions. Thus, it provides opportunity to the authorities to track and verify transactions in future.
- **Tackle Tax evasion:** Digital Economy could help in tackling tax evasion. For instance, the Aadhaar-PAN linkage gives maximum disclosure about the individual to all authorities including the Income Tax Department. It helps the tax authorities to track transaction and check the income tax profile of the individual/entity.
- **E-commerce:** E-commerce is an important component of any digital economy. E-commerce platforms offer online marketplaces with lower transaction costs for buyers and sellers to come together. For instance, Amazon, Alibaba and eBay.
 - These platforms can also use the data they collect from buyers and sellers to offer better services and meet the demand of the consumers.
- **Startup Ecosystem:** India has the 2nd largest startup ecosystem in the world. Further, it is expected to witness year on year growth of 10-12%, which can propel the digital economy of India.
- **New job opportunities:** As per a report released by the Ministry of Electronics and Information Technology, the value created by the digital economy has the potential to support 60-65 million jobs by 2025.
 - Such job opportunities could include drivers of IoT enabled trucks, delivery agents in e-commerce companies etc.
- **Threats:**
 - **Effects on job market:** The growth of digital economy has further exacerbated the risks of job loss and unemployment. For instance, the influx of machine learning and artificial intelligence will make a number of low-skilled jobs redundant.
 - Emerging technologies, such as 3d printing may also allow developed economies to use robots to “reshore” manufacturing jobs. This would lead to a stream of back-migration and affect the remittance economy.
 - **Disruptions in industries:** The quality, speed and price of services are developing at a much faster rate due to better access to global digital platforms for research and development.
 - Many critics have raised concerns that it may lead to disruption in the existing industries as new ways of doing business would come up. Any dearth in the adoption of new technologies may hamper the business interests of a number of firms.
 - **Cybersecurity Concerns:** The regulatory framework for cyber security is inadequate. Hacking and denial-of-service attacks have led to disruption of services, both in the government and the private sector banks.

- **Data and Privacy:** Digital economy depends on the availability of structured and unstructured datasets. The growth of digital economy will further raise the concerns of data security and privacy of individuals.
- **Brain Drain:** Many countries such as the USA and China have taken a lead in developing digital economies. This may lead to migration of highly skilled professionals from developing countries, thereby affecting the domestic economy.

Way forward

- **Right to access money:** The right to access your own money in a timely and transparent manner is a basic right of every individual that must be protected by the government at any cost.
- **Branch expansion:** There are just 14.6 bank branches per 1 lakh adults in India. This is sparser in rural India. Despite the hardships of access, most workers preferred to transact at the banks. Hence Branch expansion into rural unbanked locations will significantly reduce poverty.
- **Protection rights:** The technological solutions must be coupled with a governance structure, in which protection of rights and choices of individuals must be fundamental.

National Science, Technology and Innovation Policy: A policy for the future

Syllabus: Science and Technology- developments and their applications and effects in everyday life

In News: The draft of the 5th National Science, Technology and Innovation (STI) Policy has been finalized and is now available for public consultation.

Need of a new STI Policy in India now

- **Progress in STI:** Since 2013 when the last policy was formulated, India made some unprecedented progress in STI.
- **Rapid transformation:** STI in India is undergoing rapid transformation in recent years in terms of relevance, scope and scale.
- **Only short-term impact of Covid:** COVID-19 is likely to have short- and medium-term impact on STI Resources, Strategies and Priorities.
- **Atma nirbhar Bharat:** Prime Minister gave a clarion call for achieving a “Atmanirbhar Bharat” that might need greater focus on development of indigenous technologies and encouragement to grass root level innovation.
- **Impactful technologies:** Rise of disruptive and impactful technologies and challenges, opportunities.
- **Connecting science and technology to innovation:** Strongly connecting S&T to Innovation, Industry and Society.

India's Progress in STI in Recent Years:

- **GERD:** India's Gross Expenditure on R&D (GERD) has increased by more than 3 times during last 10 years.

- **Expenditure at PPP:** India's per capita R&D expenditure at PPP got doubled in last 10 years.
- **Position in SCI journals:** India is ranked at 3rd Position in terms of no of publications in SCI journals (5th in 2014).
- **Women participation:** Women participation in R&D got doubled in last 6 years.
- **Number of start-ups:** India is the 3rd Largest Higher Education System of the world. It is positioned 3rd in terms of No of Start-ups (~32,000) and ranked 9th rank in terms of Resident Patent filing.
- **Global innovation index:** India is ranked 48th in terms of Global Innovation Index (from 81st position in 2015).
- **World Bank Global Ranking:** India has moved up by 79 places in the last 6 years in its World Bank Global Ranking in Ease of Doing Business (from 142nd to 63rd).

Key Features of the STIP Policy:

Open Science

- **Open Science Framework:** A future-looking, all-encompassing One Nation, One Subscription' is proposed as part of a new Open Science Framework that will ensure free access to scientific data for all.
- **National STI Laboratory:** The policy suggests the establishment of a National STI Observatory that will act as a central repository for all kinds of data related to and generated from the STI ecosystem.
 - From this Observatory, all data and information related to publicly-funded research would be made freely accessible to everyone under FAIR (Fair, Accessible, Interoperable and Reusable) terms.
- **INDSTA (Indian Science and Technology Archive of Research):** a dedicated portal to provide access to the outputs of all publicly-funded research.
- **Open Data Policy for Publicly Funded Research:** All data used in and generated from public-funded research will be available to everyone under FAIR (findable, accessible, interoperable and reusable) terms.
- **Vision of the Policy:** The Science, Technology and Innovation Policy will be guided by the following broad vision;
 - To achieve technological self-reliance and position for India among the top three scientific superpowers in the decade to come.
 - To attract, nurture, strengthen and retain critical human capital through a 'people-centric' science, technology and innovation (STI) ecosystem.
 - To double the number of Full-Time Equivalents (FTE) researchers, Gross Domestic Expenditure on R&D (GERD) and private sector contribution to the GERD every 5 years.
 - To build individual and institutional excellence in STI with the aspiration to achieve the highest level of global recognitions and awards in the coming decade.

- **Prepared by:** The policy is initiated jointly by the Office of the Principal Scientific Advisor (Office of PSA) and the Department of Science and Technology (DST).
- **Aim:** The policy aims to reorient Science Technology & Innovation (STI) in terms of priorities, sectoral focus and strategies.

Capacity Development

- **Research Excellence Framework for HEIs in India (REFI):** It will be evolved for research assessment to secure the continuation of a holistic, dynamic and responsive research base across the full academic spectrum within India's higher education ecosystem.
- **Research in STI:** Research and Innovation Excellence Frameworks (RIEF) will be developed to enhance the quality of research along with promotion of engagements with relevant stakeholders.
- **Interdisciplinary projects:** Creation of 'Engaged Universities' to the needs of the community by conducting interdisciplinary projects involving scientific and technological and social science-based interventions.
- **Innovation and Entrepreneurship centres:** they will be established at regional levels in a collaborative approach with the participation of local Academic and R&D institutions, industries, MSMEs, Startups, etc.

Financing STI

- **Expansion of the STI Funding Landscape:** With an aim to expand the financial landscape of the STI ecosystem, each department/ ministry in the central, the state and the local governments, public sector enterprises, private sector companies and startups will set up an STI unit with a minimum earmarked budget to pursue STI activities.
- **State allocation for STI-** related activities: Each State to earmark a percentage of the state allocation for STI-related activities under a separate budget head.
- **Foreign Multinational Companies (MNCs):** Partnerships and collaborations with domestic private (SMEs and start-ups) and public sectors entities (HEIs and research organizations) to work on projects aligned to national needs and priorities.
- **Incentivisation for STI investments:** Boosting fiscal incentives for industries investing in STI through incremental R&D based tax incentives, tax credit for investing in facilities for commercialization, tax holidays, tax waivers, target-based tax incentive for specific domains, tax deduction, expatriate tax regimes, remodelling of patent box regime etc.

Research

- **Joint appointments:** across government, academia and industry at both the national and the international levels will be facilitated to attract the best talent into the research ecosystem.
- **Research solutions:** It should address solutions for different regions/ socio-economic strata including a focus on rural problems in the country.
- **Innovation and Entrepreneurship:** An institutional architecture for integrating traditional knowledge systems (TKS) and grassroots innovation into the overall education, research and innovation system.

Technology Development and Indigenization

- **Indigenous Development of Technology:** Key products or components imported by Indian companies for their manufacturing plants will be identified and a provision will be made to fund such product-based R&D with industry-academia collaborations
- **Technology indigenization:** To strengthen India's local R&D capabilities in the production of technologies that are largely being imported, infrastructure will be set up and existing mechanisms will be strengthened to adapt existing technologies to suit the local needs.
- **Sustainable Technology :** Policy pushes for development and deployment of sustainable technologies to address major socio-economic challenges and changing aspirations of the people.
- **Establishment of Strategy Technology Board:** It will bridge all strategic government departments and monitor and recommend technologies to be bought or indigenously made.
 - It will act as a connecting bridge between different strategic departments and to monitor and recommend technologies to be bought or indigenously made in the strategic departments or in private sector or in academic institutions in line with self-reliant India.
- **Creating Strategic Technology Development Fund (STDF):** it will encourage the private sector and HEIs to develop strategic technologies. STDF to be managed by the independent body STB to avoid conflict of interest.

Equity and Inclusion

- **Institutionalising Equity and Inclusion in STI:** An Indian Centric E&I Charter will be developed for tackling all forms of discriminations in STI, based on gender, caste, geography, language, disability and other exclusions and inequalities in STI leading to the development of an institutional mechanism.
- **Ageism-related issues:** minimisation of career breaks are to be addressed for effective retention of trained women into the STI workforce.

Science Communication and Public Engagement

- **Capacity Building and Research:** Creative and cross-disciplinary platforms of Science Communication will be promoted to enable dialogue and knowledge transfer between researchers, science communicators and the public.
- **Community-centric programmes:** regional science centres will be encouraged to promote science communication in regional languages with local and hyper-local contexts for last-mile connectivity.
- **Mainstreaming Science Communication:** Every public-funded institution and department will have a dedicated wing set-up for science communication and public engagement in STI-related activities.

International STI Engagement

- **Engagement with Diaspora:** Fellowships and internships schemes and research opportunities in India will be expanded and widely promoted across different ministries

to attract diaspora. An engagement portal exclusively for Indian scientific diaspora will be created (e.g, Pravasi Bharatiya Academic and Scientific Sampark- PRABHAS).

- **Proactive STI Diplomacy Strategy:** International Knowledge Centres, preferably Virtual, will be established to promote global knowledge and talent exchange by creating avenues such as visiting fellowships, joint research schemes, training programmes, invited lectures etc.

STI Governance

- **An inter-sectoral, inter-ministerial national level:** STI Governance mechanism will be set up at the highest level, for building synergy and improving coordination among various ministries/ departments/ organizations to strengthen the national STI ecosystem.
- **Standardized Research and Innovation Excellence Frameworks (RIEF):** it will be based on international benchmark, will be formulated to ensure cohesive and transparent evaluation of all kinds of research and innovation.
- **A suitable metric:** it will be developed to evaluate and recognize the outcome and impact of research activities with respect to its direct relevance to Indian needs, while continuing to maintain international comparability.
- **An STI Policy Institute:** Insititute with a strong national and international connect; will be established with a mandate to serve all aspects of STI policy governance.
- **Improve STI Education:** Strategies to improve STI education making it inclusive at all levels and more connected with the economy and society will be developed through processes of skill building, training and infrastructure development.

Challenges associated with STIP,2020:

- **No clarity:** STIP faces the challenges of how to finance the R&Ds and start-ups and what role do the industries and government play in it.
- **Inclusion issue:** There is no clarity on how the representation of women and transgender will be increased.
- **Less focus on collaboration:** Innovation does not take place with a homogenous system of working and it will occur when different minded people and systems are brought together.
- **Top-down approach:** Creation of multiple authorities such as Strategy Technology Board and Strategic Technology Development Fund (STDF) is against the objective of decentralisation.

The pandemic has presented an opportunity for R&D institutions, academia, and industry to work in collaboration with shared purpose, synergy, collaboration and cooperation, which can help the country to develop the capabilities. The STIP draft can help in adopting such learnings for greater efficiency and synergy in future.

Avian Influenza

Syllabus: Awareness in The Fields Of IT, Space, Computers, Robotics, Nano-Technology, Bio-Technology, Pharma Sector & Health Science

In News: In a bid to curb the spread of the bird flu or avian flu viruses, Central Government has set up a **control room in the national capital** to monitor the situation.

Status of Avian Influenza:

- **Bird Flu or Avian Influenza:** It is a highly contagious viral disease caused by Influenza Type A viruses which generally affects poultry birds such as chickens and turkeys.
- **Bird flu spread:** Wild aquatic birds such as ducks and geese are the natural reservoir of Influenza A viruses and the central players in the ecology of these viruses.
 - Many birds carry the flu without developing sickness and shed it in their droppings. Since birds excrete even while flying, they also provide a nice aerosol of influenza virus, shedding it all over the world.
- **Symptoms:** Unlike in birds, where it generally infects the gut, the avian influenza attacks the respiratory tract of humans and may cause severe respiratory illnesses such as pneumonia or Acute Respiratory Distress Syndrome (ARDS). Its early symptoms include fever, cough, sore throat, and sometimes abdominal pain and diarrhoea.
- **Treatment:** Antiviral drugs, especially oseltamivir, improve the prospects of survival in humans.
- **Bird Flu in India:** India notified the first outbreak of avian influenza in 2006. Infection in humans is not yet reported in India though the disease is zoonotic. There is no direct evidence that AI viruses can be transmitted to humans via the consumption of contaminated poultry products.
 - In India, the disease spreads mainly by migratory birds coming into India during winter months i.e. from September – October to February – March. However, the secondary spread by human handling (through fomites) cannot be ruled out.
- **Common Strain:** The most common strain of the virus that causes severe respiratory disease in birds is H5N1; various other strains like H7, H8 too, cause infection.
- **Human Transmission:** The H5N1 virus can infect humans from the infected bird. The first case of H5N1 infection in humans was reported in Hong Kong in 1997 when a poultry farm worker caught the infection from infected birds.
- **Human-Human Transmission:** The major concern is high mortality rate (almost 60%) in humans due to bird flu. However, in its present form, human-to-human infection is not known – human infections have been reported only among people who have handled infected birds or carcasses.
- **Vulnerability of India's Population to Bird Flu:** As per experts the chances of the H5N1 virus infecting humans are comparatively low in India as compared to South East Asian countries. It is because both meat and eggs in India are eaten well-cooked and exposed to over 100 degrees Celsius. Thus, the chances of humans contracting the virus from eating chicken and eggs is extremely rare.

What is the origin of the spread of the virus and its causes?

A European Food Safety Authority report revealed that 561 avian influenza discoveries were made between August-December (2020) in 15 European countries and the U.K.

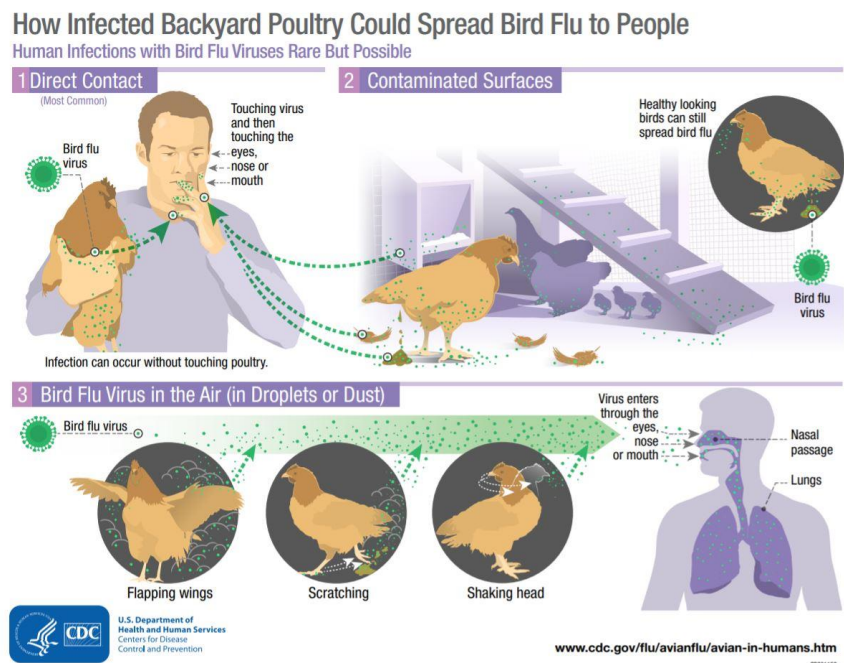
- The virus was first reported in geese in China in 1996. Since then, outbreaks have been reported periodically across the world. India reported the presence of the virus in Nandurbar, Maharashtra, in 2006.
- H5N1 and H5N8 were two of three subtypes found in Europe, these were mainly found in wild birds along with a few poultry and captive birds.
- **Migratory birds have been largely responsible** for spread of the virus into India during winter. It spreads further through movement of local residential birds and poultry.
- Genetic analysis suggested that a tenacious transmission of this virus strain is coming from **wild birds in Asia to west-central Europe**.
- **Movement of men and material from poultry** farms has also been a cause for the further blowout.

Action Plan for Prevention, Control & Containment of Avian Influenza:

Department of Animal Husbandry and Dairying (DAHD) had prepared an action plan in 2005 which was revised in 2006, 2012, 2015 and 2021 for guidance of State Government for prevention, control and containment of Avian Influenza in India. The action plan calls for:

- **Strengthening the biosecurity of poultry farms**, disinfection of affected areas, proper disposal of dead birds/carcasses
- Timely collection and submission of samples for confirmation and further surveillance
- Intensification of surveillance plan as well as the general guidelines for prevention of disease spread from affected birds to poultry and humans.
- **Coordination with the forest department** for reporting any unusual mortality of birds was also suggested to the States.
- To keep a vigil on any unusual mortality amongst birds and to report immediately to take necessary measures.

How to deal with Avian influenza?



Influenza type A viruses cause Bird flu, a highly contagious viral disease. Normally birds are carriers of this virus, takes it across the continent, though unaffected themselves, affect a large population of other birds.

- These viruses mainly affect poultry birds such as chickens and turkeys. Although rare, this virus sometimes also affects mammals such as pigs, horses, cats, and dogs.
- H5N8 and H5N1 are subtypes of avian influenza Virus.
- **H5N8** has been found in crows in Madhya Pradesh and Rajasthan.
- **H5N1** strains have been found in ducks in Kerala and migratory birds in Himachal.
- **Death count of poultry birds in Haryana** is in thousands followed by Jharkhand and Gujarat. The cause of death in these three States is still unidentified.
- Crows in Rajasthan and Madhya Pradesh, migratory birds in Himachal Pradesh, and poultry in Kerala have been **targeted by the two subtypes of the virus**.
 - Tests have confirmed H5N1 is responsible for the deaths of over 2,000 migratory birds in Himachal Pradesh.
 - H5N8 has been recognized as the cause of deaths of thousands of poultry in Kerala, and hundreds of crows in Rajasthan and Madhya Pradesh.

Impact of Bird Flu:

Economic impact:

- **Economic loss:** According to the Ministry of Agriculture and Farmers Welfare, India's poultry sector is worth Rs.80,000 crore, of which the organised sector represents 80%. India has a base of over 729 million poultry birds, of which 30% are layers and 40% are broilers, according to the National Action Plan for Egg and Poultry 2022.
- **Reduce exports:** Exports are mainly focused on West Asia, neighbouring countries and East Asia, were valued at ₹532 crore in 2017, with an emphasis on processed products such as egg powder, yolk powder, pharma ingredients, and chicken products.
- **Affects livelihood:** By the government's estimates, there are 30 million farmers who keep backyard birds, while small and medium farmers who contribute to aggregators are crucial players in the larger ecosystem.

Environmental loss:

- **Culling of birds and loss of biodiversity:** This large base shows that a serious outbreak of HPAI, as was witnessed during 2005-06 in some States, can be catastrophic. The official data put the number of culled birds at over one million.
 - In later years, bird flu surfaced in several States, such as Manipur, Assam, West Bengal, Tripura, Bihar, and Kerala, leading to destruction of millions of birds.

Impact on health:

- **Loss of source of nutrition:** It is not only animal health issues, but it also results in the reduction of a protein source for developing countries.

What is being done to stop the spread?

- **Firstly**, more than 69,000 birds which included ducks and chickens were culled in Alappuzha and Kottayam in accordance with India's 2015 national avian influenza plan, in an attempt to stop the spread.

- **Secondly**, all the states have been asked to be watchful of any unusual deaths or disease outbreak signs amongst birds, particularly migratory ones as they are considered to be one of the causes of the spread.
- **Thirdly**, states have been asked to disinfect and dispose of the dead birds properly, biosecurity of poultry farms needs to be strengthened.

It is very rare that avian influenza viruses cross the species barrier and directly infect humans but mutations in the virus can create a new avian influenza virus which can result in continuous transmission between humans, leading to genesis of pandemic influenza. Hence, it is suggested to carry out genome sequencing of virus samples to track the evolution of the virus.

Enabling Energy Efficiency: Less Input, Same Output

Syllabus: Conservation, environmental pollution and degradation

In News: Union Government for the first time has laid down Rights to the Electricity Consumers through “Electricity (Rights of Consumers) Rules, 2020”.

Following key areas are covered in the Electricity (Rights of consumers) Rules:

- **Rights** - It is the right of consumer to have minimum standards of service for supply of electricity from the distribution licensee.
- **Release of new connection and modification in existing connection** - Transparent, simple and time bound processes.
- **Metering** - No connection shall be given without a meter and meter shall be the smart pre-payment meter or pre-payment meter.
- **Billing and payment** - Consumer shall have the option to pay bills online or offline.
- **Call Centre for Consumer Services** - Distribution licensee shall establish a centralised 24x7 toll-free call centre.

More in News:

Under Clean Energy Research Initiative of DST, BHEL to establish efficient coal based Thermal Power Plants.

“Healthy and Energy Efficient Buildings” initiative of Energy Efficiency Services Limited with the U.S. Agency for International Development’s (USAID)

Nobel Prize in Chemistry, 2019 awarded for energy efficient lithium-ion battery.

What is energy efficiency?

Energy efficiency refers to a reduction in the energy consumption by using less energy to attain the same amount of useful output. For example, an energy-efficient LED bulb (Distributed under UJALA scheme) uses 75-80% less energy than a traditional bulb but provides the same level of light.

Energy efficiency is associated with economic efficiency and includes technological, behavioural, and economic changes.

Need for Energy Efficiency

- **Energy Demand** - The primary energy demand in India is expected to grow from 770 million tons of oil equivalent (tons) in 2012 to about 1250 (estimated by International

Energy Agency) million tons in 2030. By 2040 more than 40% of primary energy supply will be imported, up from 32% in 2013.

- **Energy bill** – Currently, indigenous natural gas production caters about 50% of the country's requirements, while around 85% of the country's crude oil is imported. India spent 1.58 trillion rupees on importing 247 million tonnes of coal. This cumulatively leads to current account deficit and decreases forex.
- **More emphasis on renewable energy** – The country has set a target to raise the capacity of installed renewable energy generation plants to 175 gigawatts by the end of 2022.
- **Addressing climate change** – According to an estimate by UN in its Global Status Report, 70 per cent of the global carbon emissions can be reduced significantly by increasing energy efficiency.
- **Cleaner and greener environment** – Power generation and vehicular emissions are primary source of air pollution in India. Air pollution is one of the world's single biggest environmental risks to human health, with one in nine deaths linked to poor indoor or outdoor air quality.

Challenges faced in achieving Energy Efficiency

- **Generation side**
 - **Thermal**– The use of low grade coal, outdated technological equipments, high consumption of water and loss in transmission by discoms has led to energy inefficiency in thermal sector.
 - **Nuclear** – India is yet to include thorium based reactors in its nuclear power plants which are more energy efficient than the current pressurised heavy water reactor and fast breeder reactor.
- **Consumer side**
 - **Agricultural consumers**– Electric Subsidy is provided to farmers for reducing cost of production and better productivity. However, the reckless use of subsidised electricity for irrigation is resulting in energy wastage.
 - **Industries** – Energy efficient measure requires advanced technology and manpower which results in high cost for industries. This deters them from installing energy efficient measures, especially after COVID-19 when industries witnessed losses.
 - **Transport Sector** – Transport was responsible for 28% of total final consumption of energy globally in 2016, and more than 90% of transport energy use depends on oil products. Introducing energy efficiency with BS-VI norms or e-vehicles will transform the sector radically.
 - **Households** – The key barriers for households to adopting energy-efficient appliances are upfront costs and availability. This requires government and utility programs aim to improve the market for energy-efficient appliances

Government Initiatives–

- **The Energy Conservation Act (EC Act)** was enacted in 2001 with the goal of achieving energy efficiency.

- Bureau of Energy Efficiency (BEE) was set up as the statutory body in 2002 to facilitate the implementation of the EC Act.
- **Standards and Labeling:** BEE initiated the Standards and Labeling programme for equipment and appliances in 2006 to provide the consumer an informed choice about the energy saving and thereby the cost saving potential of the relevant marketed product.
- **Energy Conservation Building Codes (ECBC):** Bureau of Energy Efficiency developed a voluntary Star Rating Programme for buildings which is based on the actual performance of a building, in terms of energy usage in the building over its area expressed in kWh/sq. m/year.
- **National Mission for Enhanced Energy Efficiency (NMEEE):** The National Mission for Enhanced Energy Efficiency (NMEEE) is one of the eight missions under the National Action Plan on Climate Change. The NMEEE spelt out four initiatives to enhance energy efficiency in energy intensive industries which are as follows:
 - **Perform Achieve and Trade Scheme (PAT)** – This is a market based mechanism to enhance the cost effectiveness in Energy Intensive industries through certification of energy saving which can be traded.
 - **Market Transformation for Energy Efficiency (MTEE)** – It is for accelerating the shift to energy efficient appliances in designated sectors through innovative measures to make the products more affordable. Under MTEE, two programmes have been developed i.e. Bachat Lamp Yojana (BLY) and Super Efficient Equipment Programme (SEEP).
 - **Energy Efficiency Financing Platform** – It is for creation of mechanisms that would help finance demand side management programmes in all sectors by capturing future energy savings.
 - **Framework for Energy Efficient Economic Development** – It helps in development of fiscal instruments to promote energy efficiency.
- **School Education Program:** Considering the need to make the next generation more aware regarding efficient use of energy resources, it is necessary to introduce children during their school education. In this regard, promotion of energy efficiency in schools is being promoted through the establishment of Energy Clubs.
- **Strengthening Institutional Capacity of States**
 - Contribution to State Energy Conservation Fund (SECF) Scheme: The State Energy Conservation Fund (SECF) is an instrument to overcome the major barriers for implementation of energy efficiency projects.
- **Demand Side Management (DSM) Scheme**
 - Agriculture DSM: In order to tap the energy saving potential, Agriculture Demand Side Management (AgDSM) program was initiated by Bureau with an objective to induce energy efficiency in agriculture sector by creating market based framework for implementation of few pilot projects and create awareness among end users & other stakeholders for adoption of energy efficient pumpsets (EEPS).

- Energy Efficiency in Small and Medium Enterprises (SMEs) sector: To encourage the energy efficient technologies and operational practices in SME sectors in India, BEE has initiated the energy efficiency interventions in selected 25 SMEs clusters during the XI plan.

Way Forward

India has taken significant steps to improve energy efficiency, which have avoided an additional 15% of annual energy demand and 300 million tonnes of CO₂ emissions over the period 2000-18, according to IEA analysis. A holistic approach is needed for accomplishment of goal 7 of Sustainable development goals by 2030 - "Ensure access to affordable, reliable, sustainable and modern energy for all".

Smart metering infrastructure- The smart grid enhances quality management of distribution and transmission of electricity in terms of voltage control, rerouting, reliability, monitoring and control.

- **Energy-efficient appliances** –Under Make in India, we need innovative business models that can attract manufacturers to produce efficient technology at scale and bring it within purchasing capacity. For example - At present, the most efficient fans cost more than double the price of conventional models.
- **Nationwide consumer awareness** - Only a fourth of Indian households are currently aware of BEE's star labels. While awareness levels are high among residents of metros and tier-1 cities, the majority in small towns and rural areas remain unaware.

The two-front challenge

Syllabus: Security challenges and their management in border areas

In News: Chinese soldiers have moved into Indian territory across the Line of Actual Control (LAC) in Ladakh region.

More in News

- Pakistan published new map claiming Indian territories as part of Pakistan.
- Increased ceasefire violation by Pakistan.
- The China-Pakistan axis is posing two front-challenge to India. The two neighbours are working in collusion to contain India on its northern border



India-China border is divided into three sectors:

- **Western Sector** – The LAC in the western sector falls in the union territory of Ladakh. In this sector, there is a **territorial dispute over Aksai Chin**. India claims it as part of erstwhile Kashmir, while China claims it is part of Xinjiang.
- **Middle sector** – The middle sector falls in Uttarakhand and Himachal Pradesh.
- **Eastern sector** – The eastern sector falls in the states of Sikkim and Arunachal Pradesh. This boundary line is called **McMahon Line**. **China considers the McMahon Line illegal**, claiming that Tibetan representatives who had signed the **1914 Convention held in Shimla** which delineated the McMahon line on the map, were not having rights to do so.

India –Pakistan unsettled Boundary

- **Pakistan-occupied Kashmir and Gilgit-Baltistan:** Pakistan is in the illegal occupation of approximately 78,000 sq. km of Indian Territory in Jammu and Kashmir.
- **Siachen Glacier and Saltoro Ridge:** Both are located in the Karakoram in the Himalayas just east of the Actual Ground Position Line between India-Pakistan.
 - The entire Siachen Glacier, with all major passes, is currently under the administration of India since 1984 (Operation Meghdoot).
 - Saltoro Ridge is claimed as part of Jammu and Kashmir Union Territory by India and as part of Gilgit-Baltistan by Pakistan.

Need to deal with two front-challenges

- **Chinese aggression** – The recent Chinese intrusions in Ladakh, the violent clashes between the Indian Army and the People's Liberation Army, and the deadlock in negotiations have now made the Chinese military threat more apparent and real.
- **Violation of ceasefire by Pakistan** – The situation along the Line of Control (LoC) with Pakistan has been steadily deteriorating. **For example**, Ceasefire violations along the India-Pakistan border **increased by almost 48 per cent in 2020 as compared to 2019 (Ministry of Home Affairs)**.
- **Military cooperation between the two** – China accounts for 73% of the total arms import of Pakistan between 2015-2019. Also, **Shaheen IX Pakistan-China joint exercise** to improve the combat capacity of both air forces and to enhance interoperability between them indicates closer cooperation between them.
- **China and Pakistan “all-weather friends”**– Over the last year, Beijing has supported Pakistan on Kashmir, raising the issue at the UN Security Council thrice. China has also emerged as Pakistan's biggest benefactor through its funding of the China-Pakistan Economic Corridor.
- **India- Pakistan territorial disputes**– Pakistan PM Imran Khan recently introduced a new political map, laying untenable claims to territories in the Indian state of Gujarat and Union Territories of Jammu and Kashmir and Ladakh.
- **Terror as a State Policy of Pakistan** – Deep State in Pakistan has nurtured Islamic Radical Groups as strategic assets to be used against India.
- **Armed with nuclear capabilities** – China and Pakistan both are nuclear giants. As capabilities grow and interstate trust diminishes the chances of stumbling into nuclear war in Indian sub-continent increases.

Roadblocks in dealing with two front challenge:

- **LAC is only a concept** - The border is not fully demarcated and the LAC is neither clarified nor confirmed by the two countries. India considers the LAC to be 3,488 km long, while the Chinese consider it to be only around 2,000 km.
- **Patrolling based on perception** - This has led to different perceptions of the LAC for the two sides, and soldiers from either side try to patrol the area up to their perception of the LAC.
- **Absence of External support** - Due to India's inability to clearly articulate, identify and address the Chinese threat, no other nation or international system is able to stand by India in pushing back China on Line of Actual Control.
- **Dealing with Chinese fears** - India's tilt toward the United States amid US-China tensions and QUAD grouping has made China more irritated. Also, China views India's assertions regarding Gilgit-Baltistan, as an implicit attack on the China-Pakistan Economic Corridor (CPEC), China's flagship programme.
- **Funding**: China has an annual defense budget of \$179 billion in comparison to India's just under \$67 billion.
- **Nuclear capabilities**: According to the recent data by the Swedish think tank Stockholm International Peace Research Institute (SIPRI), China possesses 320 nuclear warheads. India owns 150 nuclear arsenals.
- **Defence capabilities**: for example, India has a total of 2,123 total aircrafts including 538 combat aircraft, 172 dedicated attack aircrafts, 77 special mission planes, 722 helicopters and 23 attack helos. On the other hand, China has a total of 3,210 aircrafts including 1,232 combat aircraft, 371 dedicated attack aircrafts, 111 special mission planes, 911 helicopters and 281 attack helos.
- **Severe winter** - The administrative challenge of maintaining troops at the high altitude of Himalayas, during the winter season, is of serious concern for India as it requires more resources, both material and human.
- **No focus on realpolitik** - It is based on persistent political fantasies like India's vision of Asian unity rather than a practical ground situation where China-Pakistan only promotes their own national interests.
 - **For Instance** - While India never stopped arguing with the West in the 1970's, China and Pakistan developed a sustained engagement with the US, Europe and Japan. This was for better economic cooperation which can help them rise in Asia.

Steps taken by Government

- **Limiting economic exposure with China** - The Indian government tightened FDI norms coming from the countries which share land borders with India. Government approval has been made mandatory for such FDI's.
- **Informal talks with China** - The Wuhan and Mammlapuram summits between India and China were aimed to increase the trust and settle disputes amicably where both leaderships aimed to provide "strategic guidance to their respective militaries" to manage the border peacefully.

- **Strengthening strategic relations** - India and Australia recently inked a new military logistics agreement in the “virtual summit” between Prime Ministers Narendra Modi and Scott Morrison. The Quadrilateral Dialogue between Australia, India, Japan, and the United States is growing stronger and even expanding.
- **Offensive –defence strategy** - India has conducted strikes on terror camps in 2016 and 2019. India has launched the Mission All Out to liquidate all the terrorists in the Jammu and Kashmir.

Way Forward

To become a global power, India needs to ensure its territorial integrity and stability in the neighbourhood. Following strategic steps would pave the path for dealing with the 2-front challenge:

- **Development of Security doctrine** - India needs to develop guided doctrine to deal with this contingency. For Doctrine development, close interaction with political leadership is required as any doctrine without a political aim and guidance cannot stand the test when executed.
- **Introducing high-end technology** - India needs to build its capability with more focus on future technologies such as robotics, artificial intelligence, cyber, electronic warfare, etc.
- **Peace and development in Kashmir** - A well-planned empathetic political outreach to Kashmir aimed at addressing the issues facing the people of Kashmir would help ease the pressure from either front. For example – Back to village program increased outreach of administration in Jammu and Kashmir.
- **Defining boundaries** - Boundaries can be defined by natural features such as rivers, watersheds and prominent landmarks or artificially by latitude and longitude reference. The government should audit the past, explain colonial ambiguity, and establish the Himalayan watershed as the border.
- **Enhancing internal political coherence** - All the political parties and other stakeholders need to have one voice for issues of national importance which would strong signals to outsiders regarding our national interest and domestic compulsions to achieve same.
- **Accelerating economic modernization** - India needs to develop its manufacturing sector to reduce the trade deficit with China as we have become heavily depended on them for import of raw material which was weaponized by China amidst COVID-19.

Maritime domain awareness

Syllabus: Security challenges and their management in border areas and Various Security Forces, Agencies & Their Mandates.

In News: It is important to analyze the importance of securing seas at the time of violent standoff going on between India and China.

More in news

- **Claims of China:** As per the Chinese they are serving the interests of global scientific research but it is well-known that China uses civilian research vessels to gather crucial oceanographic data for military purposes.
- **The Asia Maritime Transparency Initiative (CSIS) survey:** It shows that China deployed 25 maritime survey missions in the Indo-Pacific between April 2019 and March 2020. This is only marginally less than the 27 missions mounted by the next six countries taken cumulatively.
- **Monitoring China:** Post-Galwan clash, Indian Navy is mainly focused on improving maritime domain awareness in the Indian Ocean, specifically in the seas around Andaman and Nicobar Islands, to monitor the activity of China.

What is maritime domain awareness?

- **Maritime domain awareness:** A normal fisherman or a port worker can turn out to be a terrorist, a pirate, a criminal, or a sea-robber.
 - To observe and track suspicious movements, law enforcement agencies require increased surveillance such as high-grade sensors and communication networks, and information sharing in real-time. This enhanced consciousness at sea is called maritime domain awareness.

Laws regarding seas:

- **Laws for seas:** India has The Territorial Waters, Continental Shelf, Exclusive Economic Zones and Maritime Zones Act, 1976 and The Maritime Zones of India (Regulation of Fishing by Foreign Vessels) Act, 1981 that requires foreign marine scientific vessels to seek licence prior to undertaking activities in Exclusive Economic Zone (EEZ) and Continental Shelf (CS). For, example, our navy forbade Chinese maritime research and survey vessels that entered our EEZ and CS without our prior consent in 2018 and 2019.
- **The Law of the Sea Convention:** It says that military vessels have “right to innocent passage” to pass through the territorial sea of a coastal state without entering internal waters till they are not against the peace, good order and security of the coastal state.
- **Different interpretations of laws on the question of scientific surveys in the EEZ of coastal states:** For example- the US maintains that hydrographical surveys without prior notice or consent are lawful in line with centuries of state practice, customary and international laws.
 - The collection of vital hydrographical data is critical to China’s understanding of the sub-surface environment.

Steps taken by India for Maritime domain awareness.

- **Coastal Radar network:** India has already integrated Mauritius, Seychelles, and Sri Lanka into the wider coastal radar chain network. Now, it is seeking to set up radar stations in the Maldives, Myanmar, and Bangladesh.

- **Monitoring:** India's P-8I aircraft are monitoring near-seas and Indian naval ships have patrolled the Andaman Seas and eastern chokepoints for People's Liberation Army Navy (PLAN) submarines.
 - India is planning to install an array of undersea sensors near the Andaman Islands in partnership with Japan.
- **Information cooperation:** Indian Navy's Information Fusion Centre-Indian Ocean Region in Gurugram is fast emerging as the most prominent information hub in the Eastern Indian Ocean. Following countries are planning to post their officers at the centre;
 - Even Indian Ocean countries such as Maldives, Myanmar, Indonesia, Sri Lanka, Bangladesh, Mauritius, and Seychelles.
 - At the centre, Indo-Pacific navies – Australia, Japan, the U.K, and the U.S.
 - Whereas, France has already posted an officer at the IFC.
 - India has also posted a Liaison Officer in: Madagascar at Regional Maritime Information Fusion Centre (RMIFC).
- **RMIFC:** India has recently joined the RMIFC as an observer. It is a key centre of maritime information in the Western Indian Ocean
 - **Monitoring Gulf:** European Maritime Awareness in The Strait of Hormuz (EMASOH) is helpful in monitoring maritime activity in the Persian Gulf and the Strait of Hormuz.
 - **Relations with France:** India signed a logistics agreement with France in 2019. France has been key for India's participation in the Western and South-Western Ocean. France facilitated an 'observer' status for India at the Indian Ocean Commission.
- **SAGAR:** India is furthering its Philosophy of Security and Growth for All in the Region (SAGAR) as a 'security provider' and 'preferred partner' in the Indo-Pacific region.
 - India has entered into shipping agreements with 21 countries in the Indian Ocean.
 - GSAT-7A, India's military satellite, will facilitate a real-time sharing of maritime information with partners.
 - However, India's maritime initiatives are not just focussed on strategic considerations but also generating cooperative synergies in the neighbourhood.

Challenges and issues associated

- **Enemy submarines:** People's Liberation Army Navy (PLAN) is developing a generation of stealthier submarines that will be capable of passing through undetected under enemy surveillance.
 - This breakthrough by the Chinese has been ascertained by a successful test of shaftless rim-driven pump-jets.
- **Undefined vision:** Despite the potential for cooperation, the institutions such as Quad remains a mechanism without a defined strategic mission. Its members have neither created a charter nor invested it with any substance.

- **India-Australia relations:** Australia's past political ambivalence towards India, its trenchant criticism of our naval expansion and its vociferous condemnation of the 1998 nuclear tests raise doubts.
- **China's influence:** Beijing's recent influence on Australia's foreign policy, which prompted its flip-flops over the sale of uranium to India as well as its peremptory withdrawal from the Quad in 2008 also are a point of concern.
- **BECA Agreement-** There is need to pay heed to valid concerns, regarding the possible compromise of information impinging on India's security and whether these agreements will barter away the last vestiges of India's strategic autonomy.
- **Global concerns about the Chinese vessels:**
 - **Survey missions:** China has mounted at least six survey missions covering the waters between Indonesia and Sri Lanka in 2019-2020.
 - The Australians too voiced concern over the activities of the Chinese vessel in international waters between the Australian mainland and Christmas Island.
- **Military expansion overseas:** Critics argue that China follows a "pattern of denial and obfuscation" in its military expansion overseas.
 - **For example-** Beijing initially denied its intention to militarise the Spratly Islands but eventually acknowledged that they serve a military purpose.
- **Intelligence gathering:** It is believed that PLA Navy (PLAN) intelligence-gathering ships have sailed our coastline to gather information on naval facilities and ships.
 - China may well take the position that their activities are legitimate under international law.

Way Forward

High priority should be given to building maritime domain awareness, especially Under water Domain Awareness (UDA) capabilities.

- **Proper strategy:** Though we have the necessary capacity to monitor and interdict survey vessels well before they enter our EEZ, we need a comprehensive strategy to tackle future challenges.
- **Measures for tackling China:**
 - Solidarity for common cause: In order to rein in China's hegemonic urges, there is need for affected nations to come together to show their solidarity and determination in a common cause.
 - Indo-Pacific Concord: There is need to create a broad-based "Indo-Pacific Concord", of like-minded regional democracies as an organization with a maritime security charter, which has no offensive or provocative connotations.
 - The Concord could also designate forces to uphold maritime security or "good order at sea".
- **Multinational naval exercise:** A shore-based secretariat can be established in a central location like Port Blair, in the Andaman Islands, which would schedule and conduct periodic multinational naval exercises. The exercises could be structured to polish the skills of participating navies in specializations like-

- Humanitarian assistance and disaster relief.
- Countering non-traditional threats.
- Undertaking search-and-rescue operations.
- Establishing networked maritime domain awareness.
- **Need of Comprehensive Underwater Domain Awareness (UDA) strategy:**
 - **Coordination:** coordination is required between our national security agencies, the navy and the government departments responsible for the marine environment and disaster management.
 - **Collaboration:** collaborations with like-minded countries who share our concerns is required. Such cooperation includes deepening of real-time information exchange, co-development and deployment of UDA monitoring devices and closer coordination in the patrolling of sea lanes to ensure a free and open Indo-Pacific.
- **Strengthen QUAD and Malabar Exercise:**
 - **Australia inclusion:** The move will bolster the ability of India, Australia, Japan and the United States to work together to uphold peace and stability across the Indo-Pacific region.
 - **QUAD grouping:** The Quadrilateral Security Dialogue or Quad has its roots in the Core Group of four senior diplomats representing the USA, Japan and Australia with a shared objective to ensure and support a free, open and prosperous” Indo-Pacific region.

Foreknowledge was identified by the legendary military theorist, Sun Tzu as the critical element in the battle. It can be gathered only with specialized tools and by men who knew the enemy well. Although modern warfare has become technology-based and more complex, ‘foreknowledge’ is still critical as the enemy at sea has become more unrecognizable. This highlights the need for maritime domain awareness

APPENDIX -1 | FACTLY MAGAZINE

POLITY

When passed Bills do not convert into functioning laws?

Why in News?

Over the years, Parliament has repealed several laws. But there have also been examples when the government has not brought an already passed law into force.

Few such Examples

- Two such examples are the National Environment Tribunal Act and the Delhi Rent Control Act which Parliament passed in 1995 but had never brought these laws into force.

- Further, there are also multiple instances where a law specifies when it will come into effect. The 2013 land acquisition law put an outer limit of three months for the Centre to bring it into force after the President approved it.

Facts:

Bringing/removing a law: Parliament has the power to make a law and to remove it from the statute books (Judiciary can also strike down a law if it is unconstitutional). But the passing of a Bill does not mean that it be implemented from the next day. There, are more steps, for it to become a functioning law:

First Step, President's Assent:

- Article 111 of the Constitution specifies that the President can either sign off on the Bill or withhold his assent. However, the Constitution does not specify a time limit for the President to approve a Bill.
- The President rarely withholds assent to a Bill. The last time it happened was in 2006 when President A P J Abdul Kalam refused to sign a Bill protecting MPs from disqualification for holding an office of profit.
- A Bill is sent to Parliament for reconsideration if the President withholds his or her assent on it. And if Parliament sends it back to the President, he has no choice but to approve it.

Second Step, giving effect to a Law:

- It is deciding the date on which the law comes into effect. In the majority of cases, Parliament delegates the power to determine this date, to the government.

Third Step, Framing Rules & regulations

- A passed Bill is just an outline of a law. For the law to start working on the ground, a ministry or department needs to be empowered to administer it.
- The implementing ministry also needs to finalize forms to gather information and provide benefits or services. These day-to-day operational details are called rules and regulations.
- Government is responsible for framing rules and regulations. If the government does not frame them, the law or any parts of it, will not get implemented. The Benami Transactions Act of 1988 is an example of a complete law remaining unimplemented in the absence of regulations.

Mock trials of remote voting project soon: CEC

In News: The Chief Election Commissioner has said that the trials of the Election Commission's remote voting project would be carried out soon.

Facts:**Remote Voting Project:**

- Remote voting refers to enabling a voter to cast his or her franchise from any polling station in the country, not just the station or constituency the person is registered in.
- This is seen as an important programme as it would help lakhs of voters who live outside their home constituencies for work or education to vote.

- The project is being developed by the IIT-Madras using blockchain technology.

What is an e-EPIC?

- It is an Electronic version of Electoral Photo Identity Card (EPIC). It would be a non-editable PDF version of the EPIC that can be downloaded on the phone and stored on the DigiLocker app or printed from a computer.
- All general voters who have valid EPIC numbers would be able to download the Electronic version of Electoral Photo Identity Card.

Law Commission of India

In News: The Supreme Court has issued notice to the Centre on a PIL to declare the Law Commission of India as a “statutory body” and to appoint a chairperson and members for the body within a month.

Facts:

- **Law Commission of India:** It is a non-statutory body constituted by the Government of India from time to time.
- **The commission is established for a fixed tenure** and works as an advisory body to the Ministry of Law and Justice.
- **Functions:**
 - To identify laws which are no longer relevant, not in harmony with the existing climate and laws which require change.
 - To suggest suitable measures for quick redressal of citizens’ grievances in the field of law.
 - To take all necessary steps to make the poor benefit out of the legal process.
 - To examine the laws for promoting gender equality and suggesting amendments among others.
- **The recommendations of the commission are not binding** on the government. They are recommendations. They may be accepted or rejected. Action on the said recommendations depends on the ministries/ departments which are concerned with the subject matter of the recommendations.

Establishment of Law Commission

- The first Law Commission was established during the British Raj era in 1834 by the Charter Act of 1833 and was chaired by Lord Macaulay.
- The first Law Commission of independent India was established in 1955 for a three-year term. Since then, twenty one more Commissions have been established.
- The 21st Law Commission of India was established in 2015 and its tenure was upto 31st August, 2018. In 2020, the Union Cabinet has approved the creation of the 22nd Law Commission.

Govt. tightens oversight on funds received by NGOs

Why in News?

Union Home Ministry has announced several rules related to the donations received by non-governmental organisations (NGOs) and associations under Foreign Contribution (Regulation) Act, 2010.

Facts:

What are the new FCRA rules announced by the Home Ministry?

- The donations received in Indian rupees by the NGOs and associations from any foreign source should be treated as a foreign contribution. Even if that source is located in India at the time of such donation.
- It will include the contributions by foreigners of Indian origin like OCI or PIO cardholders, in Indian rupees (INR).
- As per the existing rules, Banks need to report any receipt or utilization of any foreign contribution, by any NGO, association, or person. Banks should submit these reports to the Central government within 48 hours.
- Rules cover all NGOs, whether they are registered or granted prior permission under the FCRA.
- Any violation by the NGO or by the bank of these rules of FCRA may invite penal provisions under the FCRA Act, 2010.

Foreign Contribution (Regulation) Act:

- It is an act of Parliament enacted in 1976 and amended in 2010 to regulate foreign donations and to ensure that such contributions do not adversely affect internal security.
- Coverage: It is applicable to all associations, groups and NGOs which intend to receive foreign donations.
- Exemption: Members of the legislature and political parties, government officials, judges and media persons are prohibited from receiving any foreign contribution.
 - However, in 2017 the FCRA was amended through the Finance Bill. This amendment allowed political parties to receive funds from,
 - The Indian subsidiary of a foreign company or
 - A foreign company, in which an Indian holds 50% or more shares.
- Registration: It is mandatory for all such NGOs to register themselves under the FCRA. The registration is initially valid for five years and it can be renewed subsequently if they comply with all norms.
- Amendment of FCRA Rules: In September 2020, the FCRA Act was amended by Parliament and a new provision was added that makes it mandatory for all NGOs to receive foreign funds in a designated bank account at the State Bank of India's (SBI) New Delhi branch.

Pointly for Polity

- **India Justice Report 2020:** The report has been released by Tata Trusts. The report analyses the performance of 18 large and mid-sized states and eight smaller states based on four pillars of the justice delivery system: **judiciary, police, prisons and legal aid.**

- **Corruption Perception Index, 2020:** It has been released by Transparency International(TI). The index ranks 180 countries and territories by their perceived levels of public sector corruption according to experts and business people. It uses a scale of zero to 100, where zero is highly corrupt and 100 is very clean. India's rank has slipped six places to 86th among 180 countries in the index in 2020.

POLICY

Agreement for financial support to STARS project signed between DEA and World Bank

News: Agreement for the financial support of the Strengthening Teaching-Learning and Results for States (STARS) project was signed between the Department of Economic Affairs (DEA) and World Bank along with the Ministry of Education.

Facts:

STARS project:

- **Type:** The project would be implemented as a new Centrally Sponsored Scheme.
- **Aim:** To improve the overall monitoring and measurement activities in the Indian school education system through interventions in selected states.
- **Coverage:** The project covers 6 States: Himachal Pradesh, Rajasthan, Maharashtra, Madhya Pradesh, Kerala and Odisha.
- **Implementation:**
 - At the National level, Department of School Education and Literacy (DoSEL), Ministry of Education (MOE) will be the main implementing agency.
 - At the State level, the project will be implemented through the integrated State Implementation Society (SIS) for Samagra Shiksha.
- **World Bank Funding:** The World Bank support is primarily in the form of a results-based financing instrument called Program for Results (PforR). This will ensure major reforms at the State level through a set of disbursement-linked indicators (DLIs).
- A State Incentive Grant (SIG) will also be used to encourage States to meet desired project outcomes.
- **Verification:** An independent Verification agency (IVA) will verify each result before disbursement of funds.
- **Impact:** The STARS project will be instrumental in the implementation of various recommendations of National Education Policy 2020 namely:
 - Strengthening Early Childhood Education and Foundational Learning
 - Improving Learning Assessment System
 - ICT-enabled approaches in education,
 - Teachers Development and Vocational education etc.

New land allotment policy of Jammu and Kashmir (J&K)

News: A new policy has been approved for Jammu and Kashmir. The policy focus on the allotment of land to industrial entrepreneurs.

What are the objectives of the policy?

- To address various land-related issues that are creating hurdles in the industrial development of Jammu and Kashmir. It will be done by a framework to regulate zoning of industrial areas, project appraisal, and evaluation.
- To promote inclusive growth through sustainable industrialization and employment generation. It also includes provisions of a fair and transparent mechanism for land allotment for industrial use.

Key Features of the Policy:

- **Land Allotment:** The policy covers allotment of land to industrial entrepreneurs, health institutions/ medi-cities, and educational institutions/Edu-cities.
- **Zoning of Areas:** It proposes zoning (divides land into areas called zones) of industrial areas at block and municipality levels. Zoning will be done after taking into account existing levels of industrial development in the area, its location, and level of urbanization.
- **Committees:** The policy provides for the constitution of;
 - Divisional Level Project Appraisal and Evaluation Committees to scrutinize applications received for allotment of industrial land within 30 days.
 - Apex Level Land Allotment Committee, High-Level Land Allotment Committee, and Divisional Level Land Allotment Committee to decide and allot industrial land worth Rs 200 crore, Rs 50-200 crore, and up to Rs 50 crore respectively. The time limit for allotment is within 45 days.
- **Duration of Allotment:** The land will be allotted to the investors on lease for a period of 40 years initially, which could be extended to 99 years.
- **Cancellation:** The allotted land will be cancelled in the following cases.
 - Failure of the investor to take effective steps within the stipulated time of two years.
 - Failure of the industrial unit to come into production within three years.
 - Violation of provisions under the lease deed and
 - Non-cooperation of an enterprise for a period of five years.
- **Renting out Allotted Land:** The policy allows renting out of 60% of the built-up area of a business enterprise for setting up an ancillary industrial enterprise through a tripartite agreement.

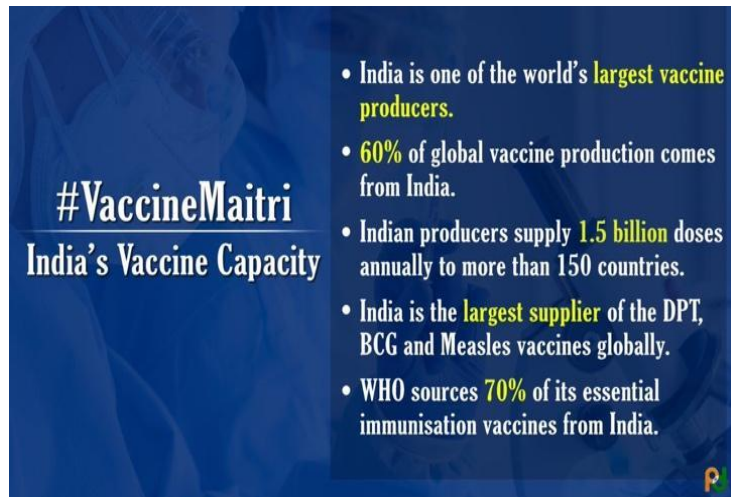
Vaccine Maitri: India Vaccine diplomacy exercise

News: India will officially start its vaccine diplomacy with the name “Vaccine Maitri” under its Neighborhood First policy.

- **Vaccine Diplomacy:** It is the use of vaccines to increase a country's diplomatic relationship with other countries.

Key Features of Vaccine Maitri

- India will supply Made-in-India Covid-19 vaccines to its neighboring and key partner countries Under its Neighborhood First policy.
- Bhutan and Maldives will be the first to get the vaccines followed by Bangladesh, Nepal, Myanmar and Seychelles.
- Sri Lanka, Afghanistan and Mauritius will also get doses once they give necessary regulatory approvals.
- Pakistan has not been named as a neighboring country which will get the vaccine.
- Vaccine will be Supplied to the partner countries in a phased manner, keeping in mind the demand.

**Earlier Diplomacy measures by India:**

- India had earlier supplied Hydroxychloroquine, Remdesivir and Paracetamol tablets as well as diagnostic kits, ventilators, masks, gloves and other medical supplies to a large number of countries during the pandemic.
- Under the Partnerships for Accelerating Clinical Trials (PACT) programme, India has also provided training to several neighbouring countries to enhance and strengthen their clinical capabilities.

Additional Facts:

- **PACT programme:** It has been launched for supporting COVID-19 vaccine development activities in partnering countries.
 - The initiative is being implemented by Biotechnology Industry Research Assistance Council (BIRAC) and Clinical Development Services Agency (CDSA) under the aegis of the National Biopharma Mission and Ind-CEPI Mission of DBT.

UNDESA report on migrants

News: International Migration report 2020 has been released by the Population Division of the United Nations Department of Economic and Social Affairs (UNDESA).

Aim: To provide the estimates of the number of international migrants according to country, age and sex for all regions of the world.

Key findings for India:

- **Indian diaspora** is 18 million strong. It is the largest transnational population in the world.

- **Destinations:** The United Arab Emirates, the US and Saudi Arabia host the largest numbers of migrants from India.
- **Reasons for migration:** Migration from India is largely motivated by labor and family reasons. Forced displacement smaller, about 106 in the total.
- **Growth in Migration:** Between 2000 and 2020, India experienced the largest gain of nearly 10 million.
- **Remittances in India:** India is the main recipient of remittances worldwide. In 2019, it received USD 83 billion in remittances. The World Bank projects that in 2020, the amount will decline by around 9% to about USD 76 billion.

Other Key Takeaways from the report:

- **Migrants:** Currently, International Migrants represent about 3.6% of the world's population.
 - The US is the largest receiving country of international migrants, followed by Germany, Saudi Arabia, Russia and the UK.
- **Impact of Covid-19:** Covid-19 pandemic may have slowed the growth in international migrants by around two million by mid-2020.
- **Remittances:** Volume of remittances sent to low-and middle-income countries is projected to reduce by 14% in 2021.

National Education Policy (NEP) 2020: Implementation Plan for School Education

News: Union Minister of Education has released details of the implementation plan of National Education Policy 2020.

Facts:

- **National Education Policy 2020:** It is the third in the series of National Education Policies (1968 and 1986 modified in 1992) in India and is the first education policy of the 21st century. NEP 2020 covers major reforms in wider spectrum of school education from pre-primary to senior secondary.

Implementation Plan for School Education:

- ShikshakParv was organised for discussing recommendations of NEP 2020 and its implementation strategies.
- Major portions of NEP will be covered under the new National Curriculum Framework (NCF) and centrally sponsored schemes. Groundwork for NCF is initiated and it is likely to be developed in the next academic session, that is 2021-22.
- Approval has been given for setting up the National Mission on Foundational Literacy and Numeracy Mission. A Committee has been formed for preparing a framework on FL&N, codification of learning outcomes etc.
- E-learning has been expanded through DIKSHA platform. DIKSHA platform provides access to a large number of curriculum linked e-content through several solutions such as QR coded Energized Textbooks (ETBs), courses for teachers, quizzes etc.

- The government has launched an initiative called 'Manodarpan' for mental health and wellbeing of students. It aims to provide emotional support and counselling to the students under distress.
- Learning Outcomes upto Secondary level have been notified and draft of learning outcomes for senior secondary level have been released for inviting suggestions.
- The department is also aligning its existing schemes i.e, Samagra Shiksha, Mid-Day Meal and Padhna Likhna Abhiyan with the recommendations of NEP 2020.

Govt launches PMKVY 3.0 to empower youth with new-age skills to boost employability

News: The government of India has launched the third phase of its flagship skilling scheme Pradhan Mantri Kaushal Vikas Yojana (PMKVY 3.0).

Facts:

- **Pradhan Mantri Kaushal Vikas Yojana (PMKVY):** It is the flagship scheme of the Ministry of Skill Development & Entrepreneurship (MSDE) launched in 2015 and implemented by National Skill Development Corporation (NSDC).
- **Objective:** To enable a large number of Indian youth to take up industry-relevant skill training that will help them in securing a better livelihood.
- Under the scheme, Individuals with prior learning experience or skills will also be assessed and certified under Recognition of Prior Learning (RPL).
- Training and Assessment fees are completely paid by the Government.

PMKVY 2.0 (2016-20)

- **PMKVY 2.0:** After the successful implementation of pilot PMKVY (2015-16), PMKVY 2.0 was launched by scaling up both in terms of Sector and Geography and by greater alignment with other missions of the government of India like Make in India, Digital India, Swachh Bharat.
- **Objectives:**
 - Enable and mobilize a large number of youths to take up industry designed quality skill training, become employable and earn their livelihood.
 - Increase productivity of the existing workforce, and align skill training with the actual needs of the country.
 - Encourage standardisation of the Certification process and put in place the foundation for creating a registry of skills.
 - To benefit 10 million youth over a period of four years (2016- 2020).

PMKVY 3.0

- **Objective:** It envisages to train around 8 lakh candidates over the scheme period of 2020-2021.
- **Key Features:**
 - This phase is designed towards making skill development more demand-driven and decentralised in its approach with a focus on digital technology, Industry 4.0 skills and COVID-related skills.

- District Skill Committees (DSCs) under the guidance of State Skill Development Missions(SSDM) shall play a key role in addressing the skill gap and assessing demand at the district level.
- It will encourage healthy competition between states. This is achieved by increasing the allocation to those states that perform better.
- It will also be a propagator of vocational education at an early level for youth to capitalize on industry-linked opportunities.

NIXI Offers free Domain in Local Indian Languages

News: The National Internet Exchange of India (NIXI) has announced that it will offer a free IDN (Internationalized Domain Name) in any of their preferred 22 official Indian languages along with every IN domain booked by the registrar.

Facts:

- **NIXI:** It is a not for profit Organization established under section 8 of the Companies Act 2013 in 2003.
- **Purpose:** It was set up for peering of ISPs among themselves for the purpose of routing the domestic traffic within the country, instead of taking it all the way to US/Abroad thereby resulting in better quality of service (reduced latency) and reduced bandwidth charges.
- **Objectives:**
 - To promote the Internet.
 - To set up, when needed, in select location(s)/parts/regions of India Internet Exchanges/Peering Points.
 - To enable effective and efficient routing, peering, transit and exchange of the Internet traffic within India.
 - To continuously work for enhancing and improving the quality of Internet and Broadband services.
 - Set up. Internet Domain Name Operations and related activities.
- **Managed by:** NIXI is managed and operated on a Neutral basis, in line with the best practices for such initiatives globally.
- **India's Country Code: ".IN"** is India's Country Code Top Level domain (ccTLD).The Govt. of India delegated the operations of INRegistry to NIXI in 2004.

Pointly for Policy

- **Global Risk Report,2021:** It has been released by the World Economic Forum(WEF).The report highlights the risks and consequences of widening inequalities and societal fragmentation, increasing due to COVID-19 pandemic in 2021 and over the next decade.
- **CoWIN App:** It is a digitalised platform launched by the Ministry of Health and Family Welfare (MoHFW).It allows Indian citizens to apply for a Covid-19 vaccine shot and help agencies in keeping a track of Covid-19 vaccination programmes.
- **Regulatory Compliance Portal:** It has been launched by the Department for Promotion of Industry and Internal Trade (DPIIT).It is aimed at minimizing regulatory burden on businesses

and citizens. For that, it will act as a bridge between citizens, industries and the Government. It will also act as a first-of-its-kind central online repository of all Central and State-level compliances.

- **MICE Tourism Policy:** It is a tourism policy released by Gujarat Government. The policy seeks to make Gujarat a hub of MICE tourism. “MICE” is an acronym that stands for “Meetings, Incentives, Conferences and Exhibitions”. It is a version of business tourism that draws domestic and international business tourists to a destination.
- **SAKSHAM Campaign:** It is a people-centric fuel conservation mega campaign launched by Petroleum Conservation Research Association (PCRA). The campaign aims to highlight the adverse health and environmental impacts of increasing carbon footprints. The idea is to convince consumers to switch to cleaner fuels and bring in behavioral change to use fossil fuel intelligently.
- **Ude Desh ka Aam Naagrik (UDAN) scheme:** It was launched in 2017 by the Ministry of Civil Aviation to develop a regional aviation market. It seeks to connect under-served and unserved airports in India through the revival of existing airstrips and airports.
- **Phases under the UDAN Scheme:** During UDAN 1.0 and 2.0, 66 airports were identified and 31 heliports (28 unserved heliports and 3 unserved airports). During UDAN 3.0, focus was on Tourism routes in coordination with the Ministry of Tourism and Seaplanes for connecting Water Aerodromes. During UDAN 4.0, the focus is on priority areas like North East Region, Hilly States, Jammu and Kashmir, Ladakh and Islands.
- **Indian Cities in the Post-Pandemic World Report:** It has been released by the World Economic Forum (WEF). The report highlights India's most pressing urban challenges that were exacerbated by the pandemic. It also provides insights for translating the lessons learned from the pandemic into an urban reform agenda.
- **SATHEE Portal:** It has been launched by the Bureau of Energy Efficiency (BEE). SAATHEE stands for State-wise Actions on Annual Targets and Headways on Energy Efficiency. It is a Management Information System (MIS) portal which will facilitate real-time monitoring of the progress of implementation of various Energy Conservation endeavors at State level.
- **Single Window Clearance Portal:** The portal has been launched by the Ministry of Coal. The portal aims to allow successful bidders for coal blocks to be able to obtain all required clearances, including environmental and forest clearances, from a single portal with progress monitoring, instead of having to go to multiple authorities.
- **Freight Business Development Portal:** It has been launched by the Ministry of Railways. It is an exclusive portal to promote and develop the railways freight business.
- **LightHouse Projects (LHPs):** These are model housing projects with houses built with shortlisted alternate technology suitable to the geo-climatic and hazard conditions of the region. The projects are constructed under Global Housing Technology Challenge-India (GHTC-India).
- **Global Housing Technology Challenge-India (GHTC-India):** It was launched in 2019 by the Ministry of Housing and Urban Affairs under the Pradhan Mantri Awas Yojana Urban (PMAY-U). It aims to transform the ecosystem of the housing construction sector in India through lighthouse projects built using advanced proven technologies.

INTERNATIONAL

Russia withdraws from Open Skies Treaty after U.S. departure

News: Russia has announced that it was pulling out of the Open Skies treaty saying that the pact had been seriously compromised by the withdrawal of the United States.

Facts:

- **Open Skies Treaty:** The treaty was signed in 1992 and came into effect in 2002.
- **Aim:** To build confidence among members through mutual openness thus reducing the chances of accidental war.
- **Key Features of the Treaty:**
 - Under the treaty, a member state can spy on any part of the host nation, with the latter's consent. A country can undertake aerial imaging over the host state after giving notice 72 hours before and sharing its exact flight path 24 hours before.
 - The information gathered such as troop movements, military exercises and missile deployments has to be shared with all member states.
 - Only approved imaging equipment is permitted on the surveillance flights and officials from the host state can also stay on board throughout the planned journey.
- **Signatories:** Currently, the treaty has 34 party states. India is not a member of this treaty.
- **Treaty Implementation:** The Open Skies Consultative Commission (OSCC), composed of representatives of all states-parties is responsible for the implementation of the Open Skies Treaty.

US tweaks H1B visa rules - higher wage is key factor now

News: The United States (US) administration has amended its H-1B visa regime to give priority to higher wages and skills instead of the prevailing lottery system for selection of candidates looking to work in the country.

Facts:**What is an H1B Visa?**

- It is a non-immigrant visa that allows US companies to employ foreign workers in occupations that require theoretical or technical expertise. They are generally approved for three years after which holders often change employers and continue working for other companies based in the US.
- **Issuance of H1B visas:** Every year, the US administration issues 85,000 H-1B work permits. Of these, 65,000 are for people with specialty occupations while the rest are reserved for foreign workers who have earned a Master's or a higher university degree in the US.
- **Share of Indians in H1B Visa:** Since the number of applications from Indian companies as well as individuals is much higher than any other nationality, a lion's share of these work visas is cornered by Indians.

- For example, as of April 1, 2020, the US had received about 2.5 lakh H-1B work visa applications and Indians had applied for 1.84 lakh or 67% of these visas.

What are the New Rules?

- According to the amended rules, US Citizenship and Immigration Services(USCIS) will first select registrations where the proffered wage equals or exceeds the prevailing level in that area of employment.
 - Until now, the selection of H-1B work visas was done by a randomised lottery system, which did not take into account factors such as wage, experience or any other requirements and demands.
- **Impact of New Rules:** It could impact US tech companies looking to hire from the pool of H-1B visa workers as they are skilled and available for lower salaries. Indian companies are also likely to be hit and may have to shell out more salary for on-site workers.

On Nile river, Grand Renaissance Dam project divides African nations

News: Ethiopia, Sudan and Egypt has agreed to resume negotiations to resolve their decade-long complex dispute over the Grand Renaissance Dam hydropower project in the Horn of Africa.

Facts:

- **Grand Ethiopian Renaissance Dam (GERD)** which was formerly known as the Millennium Dam is located in Ethiopia, on the Blue Nile River about 40km east of Sudan.
- The dam **will be the largest hydroelectric power plant in Africa** when completed as well as the seventh largest in the world.
- **What is the dispute?**
 - The Nile river has been at the center of the dispute involving several countries that are dependent on the river's waters. At the forefront of this dispute are Ethiopia, Egypt and Sudan.
 - The main waterways of the Nile run through Uganda, South Sudan, Sudan and Egypt and its drainage basin runs through several countries in East Africa including Ethiopia, the portion where this dam is being constructed.
 - Egypt has objected to the dam's construction saying the dam's location on the Blue Nile tributary would allow Ethiopia to gain control of the flow of the river's waters and could result in lower water levels within its own borders.
 - Sudan too is concerned that if Ethiopia were to gain control over the river, it would affect the water levels Sudan receives.
- **What is happening now?** The latest round of talks between Ethiopia, Sudan and Egypt occurred through video conference due to the Covid-19 pandemic with South Africa



observing the proceedings in its role as the current head of the African Union's rotating council in addition to other international observers.

Pointly for International Relations

- **International Energy Agency(IEA):** It was established in 1974 as an autonomous intergovernmental organization under the OECD framework. It aims to ensure reliable, affordable and clean energy for its member countries and beyond. It has 30 member countries and eight association countries. **India** became an associate member in 2017. **It's Secretariat** is located in Paris, France.
- **Clean Energy Transitions Programme(CETP):** It was launched at the IEA Ministerial Meeting in 2017 to provide independent and cutting-edge technical support to governments whose energy policies will significantly influence the global transition towards a sustainable energy future. The CETP's priority countries are Brazil, China, India, Indonesia, Mexico and South Africa.
- **Indo-French Year of the Environment:** It was launched by the India's Minister for Environment, Forest and Climate Change (MoEFCC) and the French Minister for Ecological Transition. Its objective is to strengthen Indo-French cooperation in sustainable development, increase the effectiveness of actions in favor of global environment protection and give them greater visibility.
- **Future Investment Initiative(FII):** It is an annual investment forum held in Riyadh, Saudi Arabia to discuss trends in the world economy and investment environment. It is hosted by the Public Investment Fund of Saudi Arabia (PIF). The first event was held in 2017.
- **Global Ebola Vaccine Stockpile:** The stockpile is led by International Coordinating Group(ICG) on Vaccine Provision which includes the WHO, UNICEF, the International Federation of Red Cross and Red Crescent Societies(IFRC), and Médecins Sans Frontières(MSF) with financial support from Gavi, the Vaccine Alliance. The stockpile will ensure timely access to Ebola vaccines for countries at risk during outbreaks.
- **One Planet Summit:** It has been organised by France in cooperation with the United Nations and the World Bank. The summit focuses on four major topics **1)** protecting terrestrial and marine ecosystems; promoting agroecology **2)** more sustainable way to grow food **c)** increasing funding to protect biodiversity and **4)** identifying links between deforestation and the health of humans and animals. **Theme:** "Let's act together for nature!".
- **India's Antarctic Expeditions:** India has launched the 40th scientific expedition to Antarctica. The Indian Antarctic expeditions began in 1981. Currently, India has two operational research stations in Antarctica named Maitri and Bharati. The National Centre for Polar and Ocean Research (NCPOR) manages the entire Indian Antarctic program.

ECONOMY

Explained: What are off-budget borrowings?**Off Budget Borrowings:**

- These are loans that are taken not by the Centre directly but by another public institution which borrows on the directions of the central government. Such borrowings are used to fulfil the government's expenditure needs.
- **Are these borrowings included in the fiscal deficit?** Since the liability of this loan is not formally on the Centre, the loan is not included in the national fiscal deficit. This helps keep the country's fiscal deficit within acceptable limits.
- **CAG Report:** In 2019, Comptroller and Auditor General report has pointed out that this route of financing puts major sources of funds outside the control of Parliament.
- **How are off-budget borrowings raised?** The government can ask an implementing agency to raise the required funds from the market through loans or by issuing bonds.
 - **Example:** In the Budget 2020-21, the government paid only half the amount budgeted for the food subsidy bill to the Food Corporation of India. The shortfall was met through a loan from the National Small Savings Fund. This allowed the Centre to halve its food subsidy bill.
- **What will be the fiscal deficit if we include off budget borrowings?** Due to various sources of off-budget borrowing, the true fiscal deficit is difficult to calculate. However, in July 2019, the CAG had pegged the actual fiscal deficit for 2017-18 at 5.85% of GDP instead of the government version of 3.46%.

National Startup Advisory Council

News: The Government of India has nominated 28 non-official members on the National Startup Advisory Council.

About National Startup Advisory Council:

- **National Startup Advisory Council:** It was constituted by the Department for Promotion of Industry and Internal Trade (DPIIT) in January, 2020.
- **Objective:** This is to advise the Government on measures needed to build a strong startup ecosystem. The ecosystem will nurture innovation and startups in the country. It will drive sustainable economic growth and generate large scale employment opportunities.
- **Composition:**
 - **Chairman:** Minister for Commerce & Industry.
 - **Convener of the Council:** Joint Secretary, Department for Promotion of Industry and Internal Trade.
 - **Ex-officio Members:** Nominees of the concerned Ministries/Departments/Organizations not below the rank of Joint Secretary.
 - **Non-official members** to be nominated by the Government from various categories like

- Founders of successful startups
- Veterans who have grown and scaled companies in India
- Persons capable of representing the interests of investors into startups, etc.
- The term of the non-official members will be for a period of two years or until further orders, whichever is earlier.

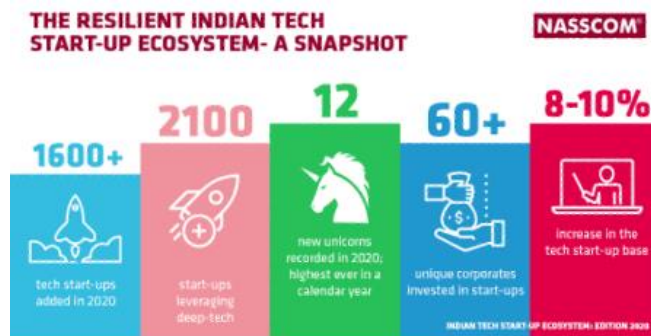
1,600 new tech start-ups, 12 unicorns added in 2020: Nasscom report

News: National Association of Software and Services Companies (Nasscom) has released the annual start-up report 'Indian Tech Start-up Ecosystem – On the March to Trillion Dollar Digital Economy'.

Facts:

Key Takeaways from the Report:

- India has added 1,600 new tech start-ups and a record 12 unicorns in 2020 (the highest ever added in a single year).
 - **Unicorn:** It is a term in the business world to indicate a startup company valued at over \$1 billion.
- The Tech start-up base continues to expand steadily at 8-10%. Sectors, which benefited from covid-19, such as edtech, agritech and gaming, are seeing a steady rise in first-time funding.
- Remote working continues to see significant adoption amongst tech startups, with around 30-35 % offering remote roles and 15-20 % companies having committed to remote work culture.
- In 2020, 14% of total investments were in deep-tech startups up from 11% in 2019. Furthermore, 87% of all deep-tech investments were in artificial intelligence (AI) and machine learning (ML) startups.
- India will have at least 12 more unicorns in 2021 taking the total count to 50.



Core growth drivers for Startup's in 2020

- Digital acceleration, and shift from moving from offline to online
- Vocal-for-Local provided market support for start-ups to thrive
- Remote work enabled start-ups to reduce burn whilst accelerating growth of new start-up hubs.

SEBI moots entry norms to set up stock exchanges

News: Securities and Exchange Board of India (SEBI) has proposed a new framework for ownership of Market Infrastructure Institutions (MII) to facilitate new entrants to set up stock exchanges and depositories.

Facts:

- **What is Market Infrastructure?** It is a system administered by a public organisation or other public instrumentality, or a private and regulated association or entity, that provides services to the financial industry for trading, clearing and settlement, matching of financial transactions and depository functions.
- **Examples:** Examples of MIIs include stock exchanges, depositories and clearing corporations. These are systemically important institutions whose failure could lead to bigger cataclysmic collapses bringing down the economy.

Key Proposals:

- A resident promoter setting up an MII may hold up to 100% shareholding, which will be brought down to not more than (either 51% or 26%) in 10 years.
- A foreign promoter from Financial Action Task Force FATF member jurisdictions setting up an MII may hold up to 49% shareholding, which shall be brought down to not more than (either 26% or 15%) in 10 years.
- Foreign individuals or entities from other than FATF member jurisdictions may acquire or hold up to 10% in an MII.
- Any person other than the promoter may acquire or hold less than 25% shareholding.
- At least 50% of ownership of the MII may be represented by individuals or entities with experience of five years or more in the areas of capital markets or technology related to financial services.

RBI launches Digital payments index to track transactions

News: Reserve Bank of India (RBI) has launched a composite Digital Payments Index (DPI).

Facts:

- **Objective:** To capture the extent of digitisation of payments across the country given the sharp pick-up in digital transactions seen in the recent past.
- **Parameters:** The index comprises five broad parameters with varying weights to measure the penetration of digital payments. The five key parameters include:
 - Payment enablers (25%).
 - Payment infrastructure—demand-side factors (10%).
 - Payment infrastructure—supply-side factors (15%).
 - Payment performance (45%).
 - Consumer centricity (5%).
- These factors include multiple sub-parameters that would help the regulator conduct its study into the digital payment ecosystem.
- **Duration of Releasing Index:** The index shall be published on RBI's website on a semi-annual basis from March 2021 onwards with a lag of 4 months.
- **Base Year:** The index has been constructed with March 2018 as the base period. At a base of 100 for March 2018, the RBI has measured that the index rose to 153.47 and 207.84 in 2019 and 2020 respectively.

Pointly for Economy

- **Bare Necessities Index(BNI):** The index has been released in the Economic Survey 2020-21. It has been developed as a means of assessing economic development using the basic needs approach which summarises the 26 basic necessities in five dimensions – water, sanitation, housing, micro-environment and other facilities.
- **Inequality Virus Report:** It has been released by Oxfam. The report states that Covid-19 has the potential to increase economic inequality in almost every country. According to the report, the wealth of Indian billionaires has increased by 35% during the lockdown and by 90% since 2009 ranking India sixth in the world after the USA, China, Germany, Russia and France.
- **India Innovation Index:** It has been released by the NITI Aayog along with the Institute for Competitiveness. The Index is aimed at providing an effective tool to track the state of innovation at both the national and the state level.
- **Startup India Seed Fund Scheme:** It was launched at the 'Prarambh: Startup India International Summit'. The fund has been set up to provide initial capital to the startups. After that start-ups will also be provided with the Govt. Guarantees, to help them raise debt capital.
- **Jayant Kumar Dash Committee:** It has been constituted by the Reserve Bank of India(RB) to study digital lending activities in the regulated and unregulated financial sector so that an appropriate regulatory approach can be put in place.
- **Payments Infrastructure Development Fund(PIDF) Scheme:** It has been launched by the Reserve Bank of India(RBI). The fund aims to a) increase the number of acceptance devices multi-fold in the country b) benefit the acquiring banks / non-banks and merchants by lowering overall acceptance infrastructure cost and c) increase payments acceptance infrastructure across the country.
- **Trend and Progress of Banking in India 2019-20:** It has been released by the Reserve Bank of India. The report is a statutory publication in compliance with Section 36 (2) of the Banking Regulation Act, 1949. It presents the performance of the banking sector, including co-operative banks and non-banking financial institutions.

ENVIRONMENT

A comparison of CBG (Compressed Bio Gas) and CNG

News: Verbio AG, a German company is setting up a compressed biogas (CBG) in the middle of lush paddy fields at Bhutal Kalan village in Punjab.

Facts:

- **Compressed Biogas (CBG):** It is a purified form of biogas which can be produced from waste including municipal solid waste, sludge from wastewater treatment plants, market residues, agricultural residues, cattle dung, sugarcane press mud among others.

Process of Producing CBG: CBG from biomass involves a two-pronged approach.

- **First Step:** Biogas is produced through anaerobic decomposition of biomass.

- **Anaerobic Process:** It is a sequence of processes by which microorganisms break down biodegradable material in the absence of oxygen. The process is used for industrial or domestic purposes to manage waste or to produce fuels.
- **Second Step:** Since biogas contains 55 to 60% methane, 40 to 45% carbon dioxide (CO₂) and trace amounts of hydrogen sulphide, the second process involves purifying the gas to remove carbon dioxide and hydrogen sulphide gases to prepare CBG.

How is CBG different from Compressed Natural Gas (CNG)?

- Chemically, CBG is the same as CNG – both are compressed methane – and have the same calorific value.
- The difference is that while CNG is a by-product of petroleum, CBG can be produced from any biomass, be it crop residue, cattle dung, sugarcane press mud, municipal wet waste or effluents from a sewage treatment plant.
- Hence, this makes CBG a commercially viable option as it can be directly used to replace CNG in transportation fuel. Just like CNG, CBG too can be transported through cylinders or pipelines to retail outlets.

Other advantages of CBG:

- Compressed biogas has the potential to minimise India's need to import fuel.
- The solid by-products of CBG can be used as bio-manure. According to experts, bio-manure produced using paddy straw can result in a 20% increase in crop yield.
- The other by-product from CBG is CO₂. It can be tapped while purifying the biogas and used to produce liquid or solid CO₂ which have high demand for food preservation or to be used in fire extinguishers.

Government Initiative to promote CBG:

- **Sustainable Alternative to Affordable Transport (SATAT) Initiative:** It was launched in October 2018 to promote the Compressed Biogas (CBG) technology.
- The scheme targeted production of 15 million metric tonnes (MMT) of CBG by 2023.
- Public sector undertakings oil marketing companies (OMCs) including IOCL have partnered with potential entrepreneurs under this initiative to set up plants and supply CBG to them for sale as automotive and industrial fuels.

More flash droughts in India by end of century

News: A new study has said that India could experience an increasing number of flash droughts by the end of this century.

Facts:

- **Flash droughts:** These are those droughts that occur very quickly, with soil moisture depleting rapidly. It is different as normally drought conditions develop in months but the flash droughts happen within a week or two.
- **Factors:** Several factors including atmospheric anomalies, anthropogenic greenhouse gas emissions play an important role in the occurrence of flash droughts.

- **Flash droughts in India:** The top five flash droughts in India based on the overall severity score occurred in 1979 (about 40% of the country was affected) followed by 2009, 1951, 1986 and 2005.

What did the Study say about Future Flash Droughts in India?

- The ongoing climate change has caused a significant increase in global temperature and this can lead to more and more flash droughts in the coming years.
- There is a fivefold rise in the frequency of extremely dry and hot years in the coming three decades causing an approximately seven-fold increase in flash droughts like 1979 by the end of the 21st century.
- **Impact:** The increased frequency of flash droughts can have severe implications for crop production, irrigation demands and groundwater abstraction in India.

Suggestions:

- **Limiting Global Warming:** By meeting the 'Paris Agreement' goals and limiting global warming to well below 2 degrees C, the numbers and frequency of the projected flash droughts may go down.
- **Predicting flash droughts:** Flash-drought prediction ahead of time using operational meteorological forecasts will help manage irrigation water demands and avoid considerable losses in agriculture.

Indian star tortoises

News: Indian star tortoises have been seized by the Forest officials while being smuggled from Andhra Pradesh to Odisha.

Facts:

- **Indian star tortoise (*Geochelone elegans*):** It is a species of tortoise found in dry areas and scrub forests of India, Pakistan and Sri Lanka. It is accustomed to monsoon seasons.
- These tortoises are easily recognizable by their star-patterned shells.
- **IUCN Status:** Vulnerable
- **Wild Life Protection Act 1972:** Schedule IV
- **CITES:** Appendix I
- **Threats:** It is the single most confiscated species of freshwater tortoise in the world. It faces threats such as loss of habitat to agriculture and illegal harvesting for the pet trade.



Kalrav festival at Nagi- Nakti bird sanctuaries in Bihar

News: 'Kalrav', Bihar's 1st state-level festival started at the Nagi-Nakti bird sanctuaries in the Jamui district, Bihar.

About the festival:

- **About the Festival:** The festival is hosted by the department of forest, environment and climate change.

- **Aim:** The event is intended to create awareness about the conservation of birds and their habitat, the wetlands.
- **Importance of Birds:**
 - Those who can understand a bird's behavior can understand that it sends a signal of any impending natural calamity.
 - Birds also help in the pollination of plant species.
- Hence, as a part of the bird conservation plan, the forest department has developed a bird ringing station at Bhagalpur

Nagi- Nakti Bird Sanctuaries:

- **Nagi Dam and Nakti Dam are although two different sanctuaries but** they can be taken as one bird area due to their closeness.
- These sanctuaries are a home to wide variety of indigenous species and migratory birds that turn up during the winters from places like Eurasia, Central Asia, the Arctic Circle, Russia and Northern China.
- Birdlife International has declared it as an important bird area due to a rare phenomenon. I.e. appearance of Around 1,600 bar-headed geese which is about 3% of the global population of this variety, at this sanctuary.
- The sanctuary is unique for its rock formation, “tor” in Jamui area. In India, this rock formation is available only in Hampi in Karnataka.

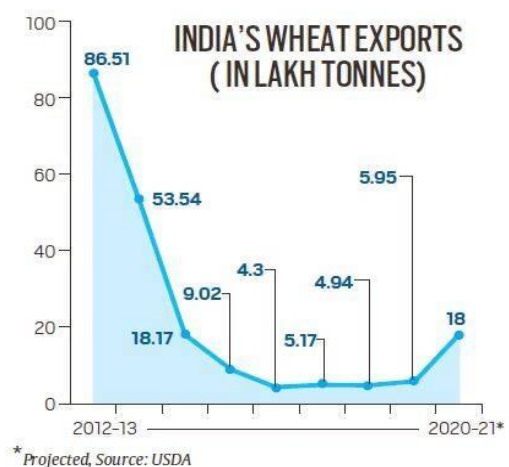
After rice, India's wheat exports register highest ever export in six years: US Department of Agriculture.

News: US Department of Agriculture (USDA) has released its forecast of Indian wheat exports for 2020-21(July-June). USDA has estimated India's Wheat Exports for 2020-21 (July-June) to be around 1.8 million tonnes (mt), as against its earlier estimate of one mt. That would be the highest ever in the last six years.

Facts:

Source: Indian Express

- **Wheat:** It is the second most important cereal crop. It is the main food crop, in the north and north-western part of the country.
- **Climate:** This rabi crop requires a cool growing season and bright sunshine at the time of ripening. It requires 50 to 75 cm of annual rainfall evenly- distributed over the growing season.
- **Wheat Growing Regions:** There are two important wheat-growing zones in the country – the Ganga-Satluj plains in the northwest and the black soil region of the Deccan. The major wheat-



producing states are Punjab, Haryana, Uttar Pradesh, Bihar, Rajasthan and parts of Madhya Pradesh.

- **Reason for India's higher wheat exports:** Due to surging international prices from Chinese stockpiling and ultra-low interest rate money increasingly finding its way into agri-commodity markets.
- **Concerns:** Indian wheat is still not competitive at the government's minimum support price(MSP) of Rs 19,750 per tonne. The export price of wheat bought in Gujarat is around Rs 20,950 per tonne. That works out to \$286 per tonne or \$290-plus after adding exporter margins. The above price is higher than the \$275-280 that major exporters such as Australia, France, the US, Russia and Canada quoted.
- **Suggestions:** This disadvantage can be overcome if wheat is sourced at below MSP from Uttar Pradesh, Bihar, Gujarat and Maharashtra where not much government procurement happens.
 - The new crop arriving in these markets would be available at Rs 17,000-18,000/tonne. This wheat can be exported by rail rakes to Bangladesh or shipped to the Middle East (UAE, Oman and Bahrain) and Southeast Asia (Indonesia, Vietnam and Malaysia).

India's Rice Exports:

- **Rice:** It is the staple food crop of a majority of the people in India. Our country is the second-largest producer of rice in the world after China.
- **Climate:** It is a Kharif crop that requires high temperature, (above 25°C) and high humidity with annual rainfall above 100 cm. In the areas of less rainfall, it grows with the help of irrigation.
- **Rice Growing Regions:** Rice is grown in the plains of north and north-eastern India, coastal areas and the deltaic regions. The development of a dense network of canal irrigation and tube wells have made it possible to grow rice in areas of less rainfall such as Punjab, Haryana and western Uttar Pradesh and parts of Rajasthan.
- **India's Rice Exports:** USDA has estimated that India's rice imports have hit a record 14.4 mt in 2020 up from 9.79 mt and 11.791 mt of the preceding two years. The country's closest competitors – Thailand and Vietnam – have seen their exports during this period.

More wildlife in Aravallis at Faridabad, Gurgaon than at Asola, need better protection: Study

News: According to a Study, the wildlife corridor of the Aravallis in Gurgaon and Faridabad harbours a richer variety of mammals than the Asola Wildlife Sanctuary despite not having as much protection.

Facts:

- **About the Study:** The study was conducted under the Worldwide Fund for Nature's small grants programme and was supported by the non-profit Centre for Ecology Development and Research (CEDAR).

- **Small Grants Programme:** It is an initiative of WWF. It aims to encourage young Indians to respond innovatively and independently to the conservation issues which affect the country by offering eligible individuals a one-time grant of upto INR 400,000 over a maximum period of 2 years for undertaking conservation research/ action research.

Key Takeaways from the study:

- **Aravallis:** Aravallis in both Faridabad and Gurugram has a larger variety of mammals compared to the Asola Bhatti Wildlife Sanctuary which is classified as a protected area and enjoys legal protection under the Wild Life (Protection) Act.
 - **Reason:** It can be attributed to the attitude of tolerance to wildlife amongst the local population, general low density of people and “subsistence agricultural practices prevalent in the two districts.
- **Significance:** The hotspot of wildlife in Aravallis is between Damdama and Mangar Bani and wildlife moves from there to Asola through the Aravalli in Faridabad. This indicates that Asola will survive as long as the Aravalli region of Gurgaon and Faridabad survives.
- **Mammals Species:** The study has revealed that around 15 species of mammals were recorded in the 200 sq km area that was covered including Gurgaon Aravallis, Mangar Bani, Faridabad Aravallis and Asola Wildlife Sanctuary.
 - Among these mammals, two species---the **leopard and the honey badger**-- are classified as endangered under Schedule I of the Wild Life (Protection) Act.
- **Concerns:** Increasing construction is a major threat to the wildlife corridor. Hence, it is imperative to control land use change and protect the wildlife corridor and habitat from further fragmentation, construction and deforestation.
- **Suggestions:** Construction of expressways and highways also needs to take into account wildlife in the city such as by constructing underpasses or flyovers that allow at least a portion of the wildlife to cross from one part to the other and prevent complete fragmentation of wildlife populations between Aravallis of Delhi and Haryana.

Govt. included Caracal as Critically Endangered species

News: The Standing Committee of National Board of Wildlife (SC-NBWL) in its 60th meeting held has approved the advisory for management of Human-Wildlife Conflict (HWC) in the country.

Facts:

- **Empowers Gram Panchayats:** The advisory empowers gram panchayats in dealing with the problematic wild animals as per the section 11 (1) (b) of Wildlife (Protection) Act, 1972.



- **Crop Damage:** Utilising add-on coverage under the Pradhan Mantri Fasal Yojna for crop compensation against crop damage due to HWC are some key steps envisaged to reduce HWC.
- **Compensation:** Payment of a portion of ex-gratia as interim relief within 24 hours of the incident to the victim/family.
- **Other Key advisories:** The advisory also envisages prescribing inter-departmental committees at local/state level, adoption of early warning systems, creation of barriers, dedicated circle wise Control Rooms with toll free hotline numbers which could be operated on 24X7 basis among others.

Other Key Decisions: The committee also approved the inclusion of Caracal into the list of critically endangered species. Now, there are 22 wildlife species under the recovery programme for critically endangered species.

Source: Wikipedia

- **Caracal:** It is a medium-sized wild cat native to Africa, the Middle East, Central Asia, and India. It is characterised by a robust build, long legs, a short face, long tufted ears, and long canine teeth.
- **Characteristics:** Typically, nocturnal, the caracal is highly secretive and difficult to observe. It is territorial and lives mainly alone or in pairs. The caracal is a carnivore that typically preys upon small mammals, birds, and rodents.
- **India:** In India, the Caracal can be found in some parts of Rajasthan and Gujarat.
- **IUCN Status:** Least Concern mainly due to their large numbers in Africa.
- Schedule I of the Wildlife (Protection) Act 1972.

Additional Facts:

- **Recovery Programme for Critically Endangered Species program:** It is one of the three components of the Integrated Development of Wildlife Habitats (IDWH).
 - **IDWH:** It was started in 2008-09 as a Centrally sponsored Scheme. It is meant for providing support to protected areas (national parks, wildlife sanctuaries, conservation reserves and community reserves except tiger reserves), protection of wildlife outside protected areas and recovery programmes for saving critically endangered species and habitats.
 - **22 wildlife species under the recovery programme:** Snow Leopard, Bustard (including Floricans), Dolphin, Hangul, Nilgiri Tahr, Marine Turtles, Dugongs, Edible Nest Swiftlet, Asian Wild Buffalo, Nicobar Megapode, Manipur Brow-antlered Deer, Vultures, Malabar Civet, Indian Rhinoceros, Asiatic Lion, Swamp Deer, Jerdon's Courser, Northern River Terrapin, Clouded Leopard, Arabian Sea Humpback Whale, Red Panda and Caracal.

Explained: The return of bird flu

News: After bird flu (avian influenza) was confirmed in Kerala, Rajasthan, Madhya Pradesh, Haryana, and Himachal Pradesh, high alert has been sounded in several states which have been reporting deaths of birds, including crows and migratory species.

Facts:

- **Bird flu or avian influenza:** It is the name used to describe a viral infection that is reported mostly in birds but has the potential to affect humans and other animals.
- **Common Strain:** The most common strain of the virus that causes severe respiratory disease in birds is H5N1; various other strains like H7, H8 too, cause infection.
- **Origin:** The virus was first reported in geese in China in 1996. Since then, outbreaks have been reported periodically across the world. India reported the presence of the virus in Nandurbar, Maharashtra, in 2006.
- **Human Transmission:** The H5N1 virus can jump species and infect humans from the infected bird. The first case of H5N1 infection in humans was reported in Hong Kong in 1997 when a poultry farm worker caught the infection from infected birds.
- **Human-Human Transmission:** The high mortality rate in humans almost 60% is the main cause of concern about the spread of bird flu. However, in its present form, human-to-human infection is not known — human infections have been reported only among people who have handled infected birds or carcasses.
- **Current Situation in India:** Currently, samples from Rajasthan, Madhya Pradesh, and Kerala have tested positive for the A (H5N8) strain of the virus, while samples from Himachal Pradesh have shown the presence of A (H5N1). Most infections have been reported either in wild birds, crows or migratory birds.
- **Is India's Population Vulnerable to Bird Flu?** Experts have said that the chances of the H5N1 virus infecting humans is comparatively low in India as compared to South East Asian countries mainly because both meat and eggs in India are eaten well-cooked which sees them being exposed to over 100 degrees Celsius. Thus, the chances of humans contracting the virus from eating chicken and eggs is extremely rare.

Gangetic River Dolphin beaten to death in UP

News: Gangetic River Dolphin was beaten to death by a group of men in Uttar Pradesh's Pratapgarh leading to the arrest of three people.

Facts:

- **Gangetic River Dolphin:** It is primarily found in the Ganges and Brahmaputra Rivers and their tributaries in India, Bangladesh and Nepal.
- **Key Characteristics:**
 - The female Gangetic Dolphins are larger than males. They are generally blind and catch their prey in a unique manner. They emit an ultrasonic sound which reaches the prey.
 - They are popularly known as 'Susu' which refers to the noise the dolphin is said to make when it breathes.



- They prefer deep waters in and around the confluence of rivers and can be an indicator of the health of the freshwater ecosystem as they can only live in freshwater.
- The Government of India has recognised them as **National Aquatic Animal** and is the official animal of the Indian city of Guwahati.
- It is also among the four freshwater dolphins in the world- the other three are: Baiji (likely extinct) found in Yangtze river in China, the Bhulan in Indus river of Pakistan and the Boto in Amazon river in Latin America.
- **Population:** While no exact count is available, various estimates suggest that the Gangetic dolphin population in India could be about 2,500-3,000. However, Minister of State for Environment, Forest and Climate Change had told Lok Sabha last year that there were about 1,272 dolphins in Uttar Pradesh and 962 in Assam.
- **IUCN Status:** Endangered
- **CITES:** Appendix I
- **Threats:** Direct killing, Habitat fragmentation by dams and barrages and indiscriminate fishing, Pollution, absence of a coordinated conservation plan, lack of awareness and continuing anthropogenic pressure are posing incessant threats to the existing Gangetic dolphin population.
- **Government Initiatives:**
 - **Wildlife Act Protection:** After the launch of Ganga Action Plan in 1985, the government in 1986 included Gangetic dolphins in the First Schedule of the Indian Wildlife (Protection) Act, 1972. This was aimed at checking hunting and providing conservation facilities such as wildlife sanctuaries. For instance, Vikramshila Ganges Dolphin Sanctuary was established in Bihar under this Act.
 - **Conservation Plan:** The government also prepared The Conservation Action Plan for the Ganges River Dolphin 2010-2020, which identified threats to Gangetic Dolphins and impact of river traffic, irrigation canals and depletion of prey-base on Dolphins populations.
 - **Project Dolphin:** It was announced by Indian Prime Minister in August, 2020. It is a ten year project that focuses on both river and marine Dolphins. It is expected to be implemented by the Ministry of Environment, Forest and Climate Change.

State of the Climate Report 2020

News: India Meteorological Department (IMD) has released the State of the Climate Report, 2020. The report looks at temperature and rainfall trends annually.

Facts:

Key Takeaways from the Report:

- **Eighth Warmest Year:** The year 2020 was the eighth warmest since India started keeping records in 1901.
- **Warmest Decade:** 12 out of the 15 warmest years were reported between 2006 and 2020 and that the past decade (2011-2020) was the warmest on record.

- **Temperature:** During the year, the annual average temperature in the country was 0.29 degree Celsius (°C) above normal (29-year average from 1981-2010).
 - However, it was much lower than 2016 (+0.71 degrees Celsius), which remains the warmest ever year the country has recorded since 1901.
- **Rainfall:** The annual rainfall over the country in 2020 was 109% of the Long Period Average (LPA) calculated for the period of 1961-2010.
- **Cyclones:** Five cyclones formed over the North Indian Ocean in 2020 including the Super cyclonic Storm AMPHAN, Very Severe Cyclonic Storms NIVAR & GATI, Severe Cyclonic Storm NISARGA, and Cyclonic Storm 'BUREVI'. Among these, NISARGA & GATI formed over Arabian Sea while the remaining three cyclones formed over the Bay of Bengal.
- **Loss due to Natural Disasters:** Bihar & Uttar Pradesh were the most adversely affected States by natural disasters during the year which claimed more than 350 deaths from each State mainly due to thunderstorm, lightning and cold waves.

Status of Avian Influenza (AI) in India

News: In a bid to curb the spread of the bird flu or avian flu viruses, Central Government has set up a control room in the national capital to monitor the situation and take stock on a daily basis of the preventive and control measures undertaken by the state authorities.

Facts:

- **What is Bird Flu or Avian Influenza?** It is a highly contagious viral disease caused by Influenza Type A viruses which generally affects poultry birds such as chickens and turkeys.
- **How does the bird flu spread?** Wild aquatic birds such as ducks and geese are the natural reservoir of Influenza A viruses and the central players in the ecology of these viruses.
 - Many birds carry the flu without developing sickness and shed it in their droppings. Since birds excrete even while flying, they also provide a nice aerosol of influenza virus, shedding it all over the world.
- **Symptoms:** Unlike in birds, where it generally infects the gut, the avian influenza attacks the respiratory tract of humans and may cause severe respiratory illnesses such as pneumonia or Acute Respiratory Distress Syndrome (ARDS). Its early symptoms include fever, cough, sore throat, and sometimes abdominal pain and diarrhoea.
- **Treatment:** Antiviral drugs, especially oseltamivir, improve the prospects of survival in humans.
- **Bird Flu in India:** India notified the first outbreak of avian influenza in 2006. Infection in humans is not yet reported in India though the disease is zoonotic. There is no direct evidence that AI viruses can be transmitted to humans via the consumption of contaminated poultry products.
 - In India, the disease spreads mainly by migratory birds coming into India during winter months i.e. from September – October to February – March. The secondary spread by human handling (through fomites) cannot be ruled out.

Action Plan for Prevention, Control & Containment of Avian Influenza:

- Department of Animal Husbandry and Dairying (DAHD) had prepared an action plan in 2005 which was revised in 2006, 2012, 2015 and 2021 for guidance of State Government for prevention, control and containment of Avian Influenza in India. The action plan calls for:
 - Strengthening the biosecurity of poultry farms, disinfection of affected areas, proper disposal of dead birds/carcasses
 - Timely collection and submission of samples for confirmation and further surveillance
 - Intensification of surveillance plan as well as the general guidelines for prevention of disease spread from affected birds to poultry and humans.
 - Coordination with the forest department for reporting any unusual mortality of birds was also suggested to the States.
 - To keep a vigil on any unusual mortality amongst birds and to report immediately to take necessary measures.

Odisha Government asks for stricter check on pangolin poaching

News: The Odisha Forest department has stressed the need for stricter monitoring of social media platforms to check pangolin poaching and trading.

Facts:

- **Pangolin:** They are scaly anteater mammals of the order Pholidota.
- **Characteristics:**
 - They have large, protective keratin scales covering their skin and they are the only known mammals with this feature.
 - If under threat, a pangolin will immediately curl into a tight ball and will use their sharp-scaled tails to defend themselves.
 - They are nocturnal animals and their diet consists of mainly ants and termites which they capture using their long tongues.
 - They tend to be solitary animals meeting only to mate and produce a litter of one to three offspring which they raise for about two years.
- **Pangolins in India:** Out of the eight species of pangolin, the Indian Pangolin and the Chinese Pangolin are found in India:
- **Indian Pangolin:**
 - Indian Pangolin is a large ant eater covered by 11-13 rows of scales on the back. A terminal scale is also present on the lower side of the tail of the Indian Pangolin, which is absent in the Chinese Pangolin.
 - The species is understood to occur in various types of tropical forests as well as open land, grasslands and degraded habitats, including in close proximity to villages.



- Indian Pangolin is widely distributed in India, except the arid region, high Himalayas and the North-East. It can be found at elevation up to 2500 m. The species also occurs in Bangladesh, Pakistan, Nepal and Sri Lanka.
- **IUCN Status:** Endangered
- **Wildlife Protection Act, 1972:** Under Schedule I of WPA, 1972
- **Chinese Pangolin:**
 - It is found in the Himalayan foothills in Eastern Nepal, Bhutan, Northern India, North-East Bangladesh and through Southern China.
 - It is adaptable to a wide range of habitats including primary and secondary tropical forests, limestone and bamboo forests, grasslands and agricultural fields.
 - **IUCN Status:** Critically Endangered
 - **Wildlife Protection Act, 1972:** Schedule I
- **Threats:**
 - Trafficking of live pangolin and its scales is a highly lucrative business for organised mafia who exploit poor and vulnerable forest dwelling communities for their criminal interests.
 - Hunting and poaching for local consumptive use (e.g. as a protein source and traditional medicine) and international trade, for its meat and scales.
 - Heavy Deforestation of their Habitat.

Pointly for Environment

- **Dragon Fruit to be renamed as Kamalam:** Gujarat government has applied for a patent to change the nomenclature of dragon fruit to 'Kamalam'. Dragon Fruit is the fruit of a species of wild cactus indigenous to South and Central America, where it is called pitaya or pitahaya. The world's largest producer and exporter of dragon fruit is Vietnam.
- **Adaptation Gap Report 2020:** It has been released by the United Nations Environment Programme (UNEP). The report aims to indicate national and international efforts to advance adaptation. Adaptation is one of the pillars of Paris accord. It involves increasing capacity and reduction of vulnerability of countries and communities to climate-related disasters.
- **Management Effectiveness Evaluation (MEE):** It has been released by the Ministry of Environment, Forests and Climate Change (MoEFCC). It is a tool to understand the strengths and weaknesses of the protected area management systems. It assesses how well National Parks and Wildlife Sanctuaries are being managed—primarily, whether they are protecting their values and achieving the goals and objectives agreed upon.
- **National Energy Conservation Awards:** The awards are organised by the Bureau of Energy Efficiency (BEE), Ministry of Power. These Awards are given by eminent dignitaries of the Government of India to Industries, Buildings, Transport and Institutions sectors along with Energy Efficient Manufacturers to recognize innovation and achievements made by them in energy conservation.
- **Natural Capital Accounting and Valuation of the Ecosystem Services (NCAVES) Project:** It has been launched by the United Nations Statistics Division, the UNEP, the Secretariat of the Convention on Biological Diversity and the European Union. It aims to assist the five

participating partner countries, namely Brazil, China, India, Mexico and South Africa, to advance the knowledge agenda on environmental-economic accounting, in particular ecosystem accounting.

- **Natural Capital Accounting and Valuation of the Ecosystem Services (NCAVES) India Forum-2021:** It is organized by Ministry of Statistics and Programme Implementation (MoSPI) in collaboration with the United Nations Statistics Division (UNSD), European Union and UN Environment. The objectives of the Forum are a) To present India's achievements in the domain of Natural Capital Accounting (NCA) and b) To prioritize the emerging opportunities for NCA in India.
- **World's Floating Solar Energy Project:** The world's largest floating 600 MW solar energy project is to be constructed at Omkareshwar dam on Narmada river in Madhya Pradesh. The project is to be financed by the International Finance Corporation, World Bank and Power Grid.
- **Asian Waterbird Census(AWC):** It was started in the year 1987. It is an annual event in which thousands of volunteers across Asia and Australasia count waterbirds in the wetlands of their country. The census is conducted by the wetlands International and forms part of a global waterbird monitoring programme called the International Waterbird Census(IWC). In India, the AWC is annually coordinated by the Bombay Natural history Society(BNHS) and Wetlands International.
- **National Medicinal Plants Board(NMPB):** It was established in 2000 under the Ministry of AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha & Homoeopathy). Its main objective is the development of the medicinal plants sector through developing a strong coordination between various ministries/ departments/ organizations for implementation of policies / programs on medicinal plants.

SCIENCE AND TECH.

Rajasthan Govt brings M-sand policy for construction works

News: The Rajasthan government has brought a policy on manufactured sand (M-sand) giving industry status to the units producing it for construction work and reducing the dependence on bajri (riverbed sand).

Facts:

What is Manufactured Sand(M-Sand)?

- Manufactured sand (M-Sand) is a substitute of river sand for concrete construction. It is produced from hard granite stone by crushing.
- The crushed sand is of cubical shape with rounded edges, washed and graded to as a construction material. The size of manufactured sand (M-Sand) is less than 4.75mm.

Why is Manufactured Sand Used?

- Due to the fast-growing construction industry, the demand for sand has increased tremendously causing deficiency of suitable river sand in most parts of the world.
- Hence, to avoid the depletion of good quality river sand for the use of construction, the use of manufactured sand has been increased.

Benefits of M-Sand:

- It is readily available and has less transportation cost.
- It does not contain organic and soluble compounds that affect the setting time and properties of cement, thus the required strength of concrete can be maintained.
- It does not have the presence of impurities such as clay, dust and silt coatings which help in producing better quality concrete.
- It can be dust free and the sizes of m-sand can be controlled easily so that it meets the required grading for the given construction.
- It eliminates the environmental impact that occurred due to the lifting of natural sand from the river bed.

Arunachal harbours a Vanadium source

News: Geological Survey of India(GSI) has found concentrations of vanadium in the palaeo-proterozoic carbonaceous phyllite rocks in the Depo and Tamang areas of Papum Pare district in Arunachal Pradesh. This was the first report of a primary deposit of vanadium in India.

Facts:

- **Vanadium:** It is a chemical element with the symbol V and atomic number 23. It is a hard, silvery-grey, malleable transition metal. The elemental metal is rarely found in nature and is electrically conductive and thermally insulating.
- **Found in:** Vanadium occurs naturally in about 65 minerals and in fossil fuel deposits. It is recovered as a by-product from the slag collected from the processing of vanadiferous magnetite ores (iron ore).
- **Uses of Vanadium:**
 - Vanadium is mainly used to produce specialty steel alloys such as high-speed tool steels, and some aluminum alloys.
 - Vanadium alloys are used in nuclear reactors because of vanadium's low neutron-absorbing properties.
 - Vanadium pentoxide is used as a catalyst for the production of sulfuric acid.
 - The vanadium redox battery for energy storage may be an important application in the future.
 - Large amounts of vanadium ions are found in a few organisms, possibly as a toxin. Particularly in the ocean, vanadium is used by some life forms as an active center of enzymes, such as the vanadium Bromo peroxidase of some ocean algae.
- **Largest Deposits:** The largest deposits of vanadium of the world are in China, followed by Russia and South Africa. China, which produces 57% of the world's vanadium consumed 44% of the metal in 2017.
- **India:** India is a significant consumer of vanadium, but is not a primary producer of the strategic metal. India consumed 4% of about 84,000 tonnes of vanadium produced across the globe in 2017.
- **Vanadium in Arunachal Pradesh:** Vanadium found in Arunachal Pradesh is geologically similar to the stone coal vanadium deposits of China hosted in carbonaceous shale. This

high vanadium content is associated with graphite, with a fixed carbon content of up to 16%.

India finds a small deposits of lithium in Karnataka

News: Preliminary surveys by the Atomic Minerals Directorate for Exploration and Research (AMD) are learnt to have shown the presence of 1,600 tonnes of lithium resources in the igneous rocks of the Margalla-Allapatna region of Karnataka's Mandya district.

Facts:

- **Lithium:** It is a chemical element with the symbol Li and atomic number 3. It is a soft, silvery-white alkali metal.
- **Characteristics:** Under standard conditions, Lithium is the lightest metal and the lightest solid element. Like all alkali metals, lithium is highly reactive and flammable. It never occurs freely in nature due to its high reactivity.
- **Extraction of Lithium:** Lithium can be extracted in different ways, depending on the type of the deposit – it is generally done either through solar evaporation of large brine pools or by hard-rock extraction of the ore.
- **Uses of Lithium:**
 - Lithium and its compounds have several industrial applications, including heat-resistant glass and ceramics, flux additives for iron, steel and aluminum production, lithium batteries and lithium-ion batteries.
 - Lithium is also present in biological systems in trace amounts; its functions are uncertain.
 - Lithium salts have proven to be useful as a mood-stabilizing drug in the treatment of bipolar disorder in humans.
- **Largest Producers of Lithium:** In 2019, the largest producer of the lithium was Australia followed by Chile and China.

Lithium in India:

- India currently imports all its lithium needs. Over 165 crore lithium batteries are estimated to have been imported into India between 2016-17 and 2019-20 at an estimated import bill of upwards of \$3.3 billion.
- **Lithium Exploration in India:**
 - India is currently going for the domestic exploration push which also includes exploratory work to extract lithium from the brine pools of Rajasthan and Gujarat and the mica belts of Odisha and Chhattisgarh.
 - The Margalla-Allapatna area along the Nagamangala Schist Belt, which exposes mineralised complex pegmatites (igneous rocks) is seen as among the most promising geological domains for potential exploration for lithium and other rare metals.
 - There is also some potential for recovering lithium from the brines of Sambhar and Pachpadra in Rajasthan and Rann of Kachchh in Gujarat.

- The major mica belts in Rajasthan, Bihar, and Andhra Pradesh, and the pegmatite belts in Odisha and Chhattisgarh apart from Karnataka are the other potential geological domains.
- **Challenges:**
 - Firstly, the newly found lithium in India in Margalla-Allapatna is categorised as “inferred”, one of the three categories into which mineral resources are subdivided in order of increasing geological confidence.
 - Secondly, the lithium find is comparatively small, considering the size of the proven reserves in Bolivia (21 million tonnes), Argentina (17 million tonnes), Australia (6.3 million tonnes), and China (4.5 million tonnes).
 - Thirdly, India is also seen as a late mover in attempts to enter the lithium value chain, coming at a time when Electric Vehicles (EVs) are predicted to be a sector ripe for disruption.
- **Initiatives taken by India:** In 2020, Khanij Bidesh India Ltd had signed an agreement with an Argentinian firm to jointly prospect lithium in the South American country that has the third largest reserves of the metal in the world.
- **Khanij Bidesh India Ltd:** It was incorporated in 2019 by three state-owned companies, NALCO, Hindustan Copper, and Mineral Exploration Ltd, with the specific mandate to acquire strategic mineral assets such as lithium and cobalt abroad. The company is learnt to be also exploring options in Chile and Bolivia.

India approves two COVID-19 vaccines for emergency use

News: Central Drugs and Standards Committee (CDSCO) has approved the COVID-19 vaccines COVISHIELD and COVAXIN for restricted use in emergency situations. Initially, the 3 crore medical personnel considered at the highest risk for COVID-19, would be given the vaccine for free.

Facts:

COVISHIELD:

- It is a vaccine developed by the Serum Institute of India based on the Oxford AstraZeneca vaccine named ChAdOx1 vaccine (also christened AZD1222) i
- **Type of vaccine:** It is made from a weakened version of a common cold adenovirus that causes infections in chimpanzees.

- **Effectiveness:** The overall efficacy of the vaccine was found to be 70.42% – well below vaccines from Pfizer and Moderna but above the 50% threshold set by many regulators.
- **Dosage, protection duration and storage:** The vaccine has been recommended for the approval of two full doses administered around 4-6 weeks apart. Immune response could last at least a year. The vaccine can be stored at temperatures between 2°C and 8°C.


COVAXIN:

- It has been indigenously developed by Hyderabad-based Bharat Biotech in collaboration with the Indian Council of Medical Research (ICMR).
- **Type of vaccine:** It is an inactivated vaccine and is made by using particles of the coronavirus that were killed making them unable to infect or replicate. Injecting particular doses of these particles serves to build immunity by helping the body create antibodies against the dead virus.
- **Effectiveness:** The vaccine is safe and provides a robust immune response. The vaccine is yet to complete late-stage human clinical trials in India and no efficacy rate has yet been made public.
- **Dosage, protection duration and storage:** The vaccine will be administered in two doses and stored at 2-8° degrees Celsius. The efficacy of the vaccine is to be determined only after 14 days post the second dose.

Vaccines out, but data missing

The efficacy data of the Phase-3 trials conducted in India for the two vaccines approved for restricted public use on Sunday have not been made public yet.

COVISHIELD	COVAXIN
<ul style="list-style-type: none"> ■ A vaccine developed by the Serum Institute-Pune based on the AstraZeneca-Oxford vaccine has been given 'conditional approval' ■ The vaccine's efficacy is reported to be 70.4% based on the Phase-3 trials conducted in the U.K. and Brazil ■ The efficacy data of the Phase-3 trials conducted on 1,600 volunteers in 17 Indian cities have not been made public yet 	<ul style="list-style-type: none"> ■ A vaccine developed by Bharat Biotech and the Indian Council of Medical Research has been approved for restricted emergency use in clinical trial mode ■ During the first two months after the roll-out, the firm has to inform drug regulators every fortnight about the adverse effects of the vaccine ■ Phase-1 and 2 trials were conducted on 800 volunteers to determine the safety and immunogenicity of the jab ■ The efficacy data of the ongoing Phase-3 trials with 22,500 volunteers have not been made public yet



Pointly for Science and Technology

- **Flow Diverter Stents:** It is an endovascular technique used for diverting blood flow away from an intracranial aneurysm or localized ballooning of arteries in the brain, helping reduce chances of its rupture and related stroke. Currently, India does not manufacture flow diverters stents,
- **Technology Transfer Agreements:** It is the process by which a technology, expertise, knowhow or facilities developed by one individual, enterprise or organization is transferred to another individual, enterprise or organization. It may happen from country to country, from industry to industry or from research laboratory to an existing or new business.
- **Ruthenium-106:** It is a radioactive form of the rare heavy metal ruthenium. It is a "platinum group" metal similar to platinum. It is produced from the fission or splitting of uranium-235, the type of uranium used in nuclear fission reactors, so it's found in spent nuclear fuel. It is used in medicine for cancer radiation therapy, especially for eye and skin tumors. It is also used in radioisotope thermoelectric generators that power satellites. High doses of ruthenium are toxic and carcinogenic when ingested.

- **Swasth Vayu:** It is a 'Made in India' non-invasive (involves use of masks or similar device) ventilator developed by the National Aerospace Laboratories (NAL), Bengaluru. The ventilator is ideal for treating Covid-19 patients in wards, makeshift hospitals, dispensaries and homes.

SOCIAL

ShramShakti Portal and ShramSaathi module for Tribal Migrants

Why in News?

The Union Minister of Tribal Affairs has virtually launched the Shram Shakti Portal for data related to Tribal migrants. The Minister also launched the tribal training module- ShramSaathi.

Shram Shakti portal:

- The portal has been launched to tackle the challenge of lack of real-time data on the migrants with the Governments.
- It is a National Migration Support Portal that aims to collect data related to tribal migrant workers and link them with the existing welfare schemes.
- The various data that will be recorded via the portal include demographic profile, livelihood options, skill mapping, and migration pattern.

Significance:

- The portal would be able to successfully address the data gap and empower tribal migrant workers, who generally migrate in search of employment and income generation.
- It would also effectively help in the smooth formulation of state and national level programs for migrant workers.

ShramSaathi – Training module

- It is a tribal training module. It aims to ensure the process of livelihood migration is safe and productive for tribal migrants. Once training is done the tribal migrant worker can demand and access services, rights and entitlements etc.

Reason for the launch of module:

- Tribal migrants have low awareness about their rights and entitlements.
- They also do not know the ways to access services and social security in source and destination areas.

NHRC recommends measures against manual scavenging

News: The National Human Rights Commission (NHRC) has made a series of recommendations to the Centre to eradicate manual scavenging.

Facts:

- **Manual scavenging:** It is the practice of manually cleaning, carrying, disposing of or handling human excreta. According to the 2011 Census, there are more than 26 Lakh insanitary latrines in the country and the existence of insanitary latrines is the main reason for manual scavenging.

Key Recommendations of NHRC:

- **Broaden the definition of manual scavenging** to cover other types of hazardous cleaning or enact a new law for it. A penal section may be put in law to prevent the discrimination and harassment faced by the children of manual scavengers and women manual scavengers.
- **Rehabilitation process of manual scavengers** may be linked to schemes under which they can immediately start earning like MNREGA and revisit to see how they and their families are doing;
- **Compensation:** The amount of compensation paid as one time cash assistance for rehabilitation of manual scavengers may be enhanced from Rs. 40,000/- to Rs. 1 Lakh. Nodal authority/department that will bear the expense of such Compensation may also be clearly specified;
- **Ensure to remove the role of middlemen** by making provision like direct benefit transfer or by collaborating with NGOs;
- **Strict Action against local authorities** who employ people to work as manual scavengers; An App and a toll-free number for registration of complaints;
- **The National Crime Research Bureau (NCRB)** to monitor the sewer deaths and data reflected in its report;
- **Union Finance Ministry may designate particular Nationalized Bank** for each State to take-up the responsibility of extending loans to the Manual Scavengers and their dependents' up to Rs.10.00 lakhs to take up the business Activity;
- **Either individual or group insurances** must be provided to Manual Scavengers and the premium shall be paid by the concerned Local Bodies;
- **National Safai Karamcharis Finance and Development Corporation (NSKFDC)** may provide financial assistance to manual scavengers to help start up working in the domain of sanitation and training to them.

Further Reading On Manual Scavenging: <https://blog.forumias.com/swachhata-abhiyan-mobile-application/>

Pointly for Social

- **Asia-Pacific Personalised Health Index:** It has been released by the Economist Intelligence Unit(EIU).The index measures the progress of Asia Pacific countries in adopting personalised healthcare enabling the right care to be tailored to the right person at the right time.India has been ranked 10th out of 11 Asia Pacific countries in the index.
- **Dekho Apna Desh Initiative:** It is an initiative of the Ministry of Tourism launched in 2020.It aims to promote domestic tourism in India which is intended to enhance tourist footfalls in places of tourist interest so as to help develop the local economy.
- **National Kayakalp Awards:** It was launched by the Ministry of Health and Family Welfare in 2015 as part of the Swachh Bharat Abhiyan to ensure hygiene, sanitation and cleanliness in Public Health Facilities in India.The award recognises and facilitates those District Hospitals, Community Health Centres, in the public healthcare system who have achieved high levels of cleanliness, hygiene and infection control.

SECURITY

DRDO conducts successful maiden launch of Akash-NG Missile**Why in News?**

Defence Research and Development Organisation (DRDO) has conducted the successful maiden launch of Akash-NG (New Generation) Missile from Integrated Test Range off the coast of Odisha.

Facts:

- **Akash-NG Missile:** It is a new generation Surface-to-Air Missile meant for use by the Indian Air Force.
- **Purpose:** It will be used to intercept high-maneuvring low radar cross-section aerial threats.
- **Features:** It is an advanced variant of Akash missile and it comes with Active Electronically Scanned Array (AESA) multi-function radar that features all three functions - search, track and fire control in one platform.
- **Range:** The earlier variant has a maximum range of 30 km while Akash-NG can strike targets up to 70 km.

India, China soldiers clash at Naku La Pass in Sikkim

News: Indian and Chinese Soldiers have clashed at the Balwan area in Naku La Pass in Sikkim.

Facts:

- Naku La sector is a pass at a height of more than 5,000 metres above Mean Sea Level (MSL) in the state of Sikkim.
- It is located ahead of Muguthang or Cho Lhamu (source of River Teesta).
- The other passes located in the state of Sikkim are Nathu La Pass and Jelep La Pass.
- While Nathu La pass is located on the east side of Sikkim, Naku La pass is located on the northern border of Sikkim

**Cabinet approves Procurement of 83 Light Combat Aircrafts (LCA) 'Tejas'**

News: Cabinet has approved procurement of 73 LCA Tejas Mk-1A fighter aircraft and 10 LCA Tejas Mk-1 Trainer aircraft.

Facts:

- **LCA Tejas:** It is a single-engine, fourth-generation, multirole light fighter aircraft designed by the Aeronautical Development Agency (ADA). Tejas was developed in

collaboration with Hindustan Aeronautics Limited (HAL) for the Indian Air Force (IAF) and Indian Navy.

- **LCA Tejas Mk 1A** is an advanced version of LCA Mk1. It is a supersonic fighter at all altitudes for air combat which can carry a payload of 3,500 kg and it is best suited for offensive air support.
- **Key Features:** This Mk 1A is equipped with critical operational capabilities of Active Electronically Scanned Array (AESA) Radar, Beyond Visual Range (BVR) Missile, Electronic Warfare (EW) Suite and Air to Air Refueling (AAR).
- **Significance:** It is the first “Buy (Indian-Indigenously Designed, Developed and Manufactured)” category procurement of combat aircrafts with an indigenous content of 50% which will progressively reach 60% by the end of the programme.

Pointly for Internal Security

- **Exercise Kavach:** It is a Joint Military exercise involving assets of Indian Army, Indian Navy, Indian Air Force and Indian Coast Guard. The exercise was conducted under the aegis of the Andaman and Nicobar Command, the only Joint Forces Command of the country.
- **Exercise Desert Knight:** It is a bilateral air exercise between Indian Air Force (IAF) and the French Air and Space Force. The exercise aims to provide operational exposure and also help in sharing practices towards enhancing combat capability.
- **ASMI:** It is a 9mm Machine Pistol jointly developed by DRDO and the Indian Army. The weapon is aptly named “Asmi” meaning Pride, Self-Respect and Hard Work. The machine pistol can fire at a range of 100 metres and is in the class of the Uzi series guns of Israel.
- **Exercise Sea Vigil:** It is a biennial pan-India coastal defence exercise conducted along the entire 7516 km coastline and Exclusive Economic Zone of India. The exercise is coordinated by Indian Navy and involves all the 13 coastal States and Union Territories along with other maritime stakeholders. It also includes the fishing and coastal communities.

MISCELLANEOUS

Union Minister inaugurates the ‘Prarambh: Startup India International Summit’

News: Union Minister of Commerce has inaugurated the ‘Prarambh: Startup India International Summit’.

Facts:

- **Prarambh: Startup India International Summit:** The summit has been organized by the Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry.
- The summit is organized as a follow-up to the announcement made by the Indian Prime Minister at the 4th BIMSTEC Summit held in Nepal in 2018. During the occasion, India committed to host the BIMSTEC Startup Conclave.
- **The focus of the Summit:** Enhancing multilateral cooperation and engagement with countries from around the globe to collectively develop and strengthen the startup ecosystems.

- **Significance:** With participation from over 25 countries and more than 200 global speakers, the Summit is the largest Startup India International Summit organized by the Government of India since the launch of the Startup India Initiative.

Additional Facts:

- **Startup India Initiative:** It was launched in 2016 with the objective of supporting entrepreneurs, building a robust startup ecosystem and transforming India into a country of job creators instead of job seekers.
- **Managed by:** The programs under the initiative are managed by a dedicated Startup India Team which reports to the Department for Industrial Policy and Promotion (DPIIT).
- **Key Pillars:** The Key Pillars of Support for Startups under the Startup India Initiative are:
 - Simplification and Handholding: Easier compliance, easier exit process for failed startups, legal support, fast-tracking of patent applications and a website to reduce information asymmetry.
 - Funding & Incentives: Exemptions on Income Tax and Capital Gains Tax for eligible startups; a fund of funds to infuse more capital into the startup ecosystem and a credit guarantee scheme.
 - Incubation & Industry-Academia Partnerships: Creation of numerous incubators and innovation labs, events, competitions and grants.

NIC and CBSE to launch CollabCAD Software

News: National Informatics Centre (NIC), MeitY along with Central Board of Secondary Education (CBSE), Ministry of Education is jointly launching CollabCAD Software.

Facts:

- **CollabCAD Software:** It is a collaborative network, computer-enabled software system providing a total engineering solution from 2D drafting & detailing to 3D product design for students and faculty of the Engineering Graphics Curriculum.
- **Aim:** This initiative aims to provide a great platform to students across the country to create and modify 3D digital designs with a free flow of creativity and imagination.
- **Significance:** This software would also enable students to collaborate over designs across the network and concurrently access the same design data for storage and visualization.

Other Initiatives:

- **CollabCAD 3D modeling:** National Informatics Centre (NIC), CBSE, and Atal Innovation Mission (AIM), NITI Aayog will jointly release a comprehensive e-book on CollabCAD 3D modeling.
- This book is ready for public release through the CollabCAD portal and will guide CAD students, beginners, and professionals in understanding and using CollabCAD Software.

National Youth Parliament Festival 2021

News: Prime Minister of India has addressed the valedictory function of the second National Youth Parliament Festival, 2021.

Facts:

- **National Youth Parliament Festival:** It is organized by the Ministry of Youth Affairs and Sports, Government of India in collaboration with one of the State Governments.
 - But this year, the Ministry of Youth Affairs and Sports has decided not to have an anchor state and to go online and let each state bring their talent to the fore.
- **Purpose:** It is organised to commemorate the birth anniversary of youth icon Swami Vivekananda.
- **Objective:** To propagate the concept of national integration, spirit of communal harmony, brotherhood, courage and adventure amongst the youth by exhibiting their cultural prowess in a common platform.
- **Eligibility:** Youth in the age bracket of 18-25 years are invited to participate in the festival.
- **Theme:** The theme for the festival is “YUVAAH—Utsah Naye Bharat Ka”.

Pointly for Miscellaneous

- **Legion of Merit Award:** It is a military award of the United States Armed Forces given for exceptionally meritorious conduct in performance of outstanding services and achievements. It is awarded to members of the seven uniformed services of the United States as well as to military and political figures of foreign governments.
- **Pravasi Bharatiya Divas(PBD) Convention:** It is the flagship event of the Ministry of External Affairs and provides an important platform to engage and connect with the overseas Indian. It is celebrated every year on January 9th because Mahatma Gandhi had returned to India from South Africa on January 09, 1915. **Theme:** “Contributing to Atma Nirbhar Bharat”.
- **Toycathon 2021:** It's a kind of hackathon for the toy industry. It has been organized by the Ministry of Education, Ministry of Women and Child Development (MWCD), Ministry of Textile, Ministry of Commerce and Industries, Ministry of MSME, Ministry of I&B and All India Council for Technical Education(AICTE). It aims to conceptualize innovative toys based on the Indian value system which will inculcate the positive behavior and good value among the children.
- **Agri India Hackathon 2020:** It is organized by the Department of Agriculture and Cooperation and Farmers Welfare in association with Pusa Krishi, ICAR - Indian Agricultural Research Institute(IARI). Its objective is to create dialogues, and accelerate innovations in agriculture.