



VISION IAS

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CURRENT AFFAIRS

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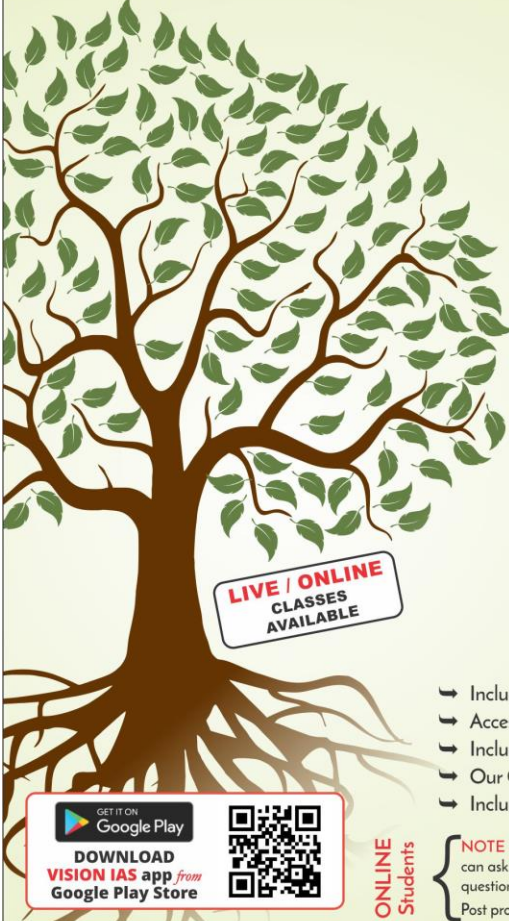
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1. POLITY AND CONSTITUTION

1.1. LATERAL ENTRY

Why in News?

Central Government had recently invited applications for senior-level positions via lateral entry.

More About the News

- Department of Personnel and Training (DoPT) has invited applications for 10 **joint secretary-level posts** in the departments of Economic Affairs, Revenue, Commerce and Highways and others.
- **Criteria for selection-** Graduation Degree, Minimum 40 Years age, 15 years' experience in fields like Revenue, Finance, Transport, Civil Aviation and Commerce.
- The recruitment will be on **contract basis** for **three to five years** depending upon the performance.

Arguments in Favour of Lateral Entry

- **Helpful in Policy Making-** It is essential to have **people with specialized skills** and domain expertise in important positions as policy making is becoming complex in nature.
 - The IAS officers see the government only from within, lateral entry would enable government to understand the impact of its policies on stakeholders — the private sector, the non-government sector and the larger public.
 - **First ARC** had pointed out the **need for specialization as far back as in 1965**. The Surinder Nath Committee and the Hota Committee followed suit in 2003 and 2004, respectively, as did the second ARC.
- **Increase in efficiency and governance-** Political & Economic Risk Consultancy Ltd in its 2012 report rated Indian Bureaucracy as the worst in Asia due to corruption and inefficiency.
 - Career progression in the IAS is almost automatic which could put officers in comfort zone. Lateral entrants could also **induce competition** within the system.
 - A UPSC-commissioned report of the Civil Services Examination Review Committee headed by YK Alagh (2001) had recommended lateral entry into middle and senior levels of the government.
 - Niti Aayog, in its Three Year Action Agenda for 2017-2020 had said that sector specialists be inducted into the system through lateral entry as that would "bring competition to the established career bureaucracy".
- **Entry and retention of talent in Government-** Justice **BN Srikrishna-headed Sixth Central Pay Commission report (2006)** said lateral entry could "ensure entry and retention of talent in the government even for those jobs that have a high demand and premium in the open market".
- **Shortage of officers:** According to a report by Ministry of Personnel, Public Grievances and Pensions there is a shortage of nearly 1,500 IAS officers in the country.
 - **Baswan Committee (2016)** had supported lateral entry considering the shortage of officers.
- **Recruitment of IAS officers at very young age-** makes it difficult to test potential administrative and judgement capabilities. Some who are potentially good administrators fail to make it, and some who do make it, fall short of the requirements. Mid-career lateral entrants with proven capabilities will help bridge this deficiency.
- **Not a new phenomenon:** It has been **successful in RBI** and the erstwhile Planning Commission, as well as its successor, the Niti Aayog.
 - **Ministry of finance** has institutionalised the practice of **appointing advisors** to the government from the world of academia and the corporate sector.
 - Concept already being followed by countries such as the United Kingdom, the United States of America, Australia, Belgium, New Zealand etc.

Arguments against Lateral Entry

- **Difficult to ensure responsibility and accountability-**for the decisions taken by the private people during their service, especially given the short tenures of 3 to 5 years.
- **No long term stakes:** The advantage with the current civil service is that policy makers have long-term interests in government.

- **Bypassing constitutional mechanism-** The recent order of the government instructed the cabinet secretary-headed committee to recruit professionals bypassing the Union Public Service Commission which is an independent organisation.
- **Transparency in Recruitment-** Political interference in the Selection process may occur and it may promote Nepotism and Spoils System (an arrangement that employed and promoted civil servants who were friends and supporters of the political group in power).
- **Lack of field experience-** Officers who will join might score on domain knowledge, but they may fall short on the experience of working in the “fields”.
- **Deters existing talent:** Lateral entry shows that experienced civil servants are less efficient and expert than private professionals, which is a not necessarily true.
 - The best talent can be attracted only if there is reasonable assurance of reaching top level managerial positions.
 - By suggesting a contract-based system for positions of joint secretary and above, the signal would be sent out that only mid-career positions would be within reach in about 15-18 years of service and there would be considerable uncertainty about career progression thereafter.
- **Earlier experiences:** The past experience of inducting private-sector managers to run public-sector enterprises has not been particularly satisfactory. For e.g. Air India, Indian Airlines etc.
- **Issue of Reservation-** It is unclear whether there would be reservation for recruitment through Lateral Entry or not.

Way Forward

India civil services portray all the characteristics of Weberian Ideal bureaucracy i.e. **hierarchy, a division of power**. Various reforms apart from institutionalised lateral entry are the need of the moment such as:

- **Set up public administration universities for aspiring and serving civil servants:** can create a large pool of aspiring civil servants as well as enable serving bureaucrats to attain deep knowledge of the country’s political economy, increased domain expertise and improved managerial skills.
- **Deputation to Private Sector-** A Parliamentary panel has recommended deputation of IAS and IPS officers in private sector to bring in domain expertise and competition.
- **Central Civil Services Authority** as recommended by 2nd ARC should take decision on posts which could be advertised for lateral entry and such other matters that may be referred to it by the Government.
- **Appraisal mechanisms:** Such as government’s new “360 degree” performance appraisal mechanism for senior bureaucrats, whereby officers are graded based on comprehensive feedback from their superiors, juniors and external stakeholders.
 - incentives for bureaucrats that are linked to their district’s annual development indicators can also be offered.
- **Make bureaucratic decision-making less top-down and more transparent:** The colonial Indian Civil Service was designed with the primary aim of maintaining law and order and pursuing state-led development while remaining insulated from the needs of the masses. India must transition away from this top down approach.

1.2. RESERVATION IN PROMOTION

Why in news?

The Supreme Court has permitted Central government for **reservation in promotion to SC/ST employees working in the public sector** in “**accordance with law**”.

Background

- This direction of apex court came in the response to government’s complaint that promotions were at a “standstill” due to separate orders passed by various high courts.
- The Supreme Court’s decision will permit the government to **fill a large number of vacancies** in various departments.
- ‘In accordance with law’ points towards the **guidelines laid down in M Nagaraj case 2006** presently applicable as there is **no specific law** which deals with the reservation in promotions.

- The apex court had further that a seven-judge Constitution bench needs to be constituted to look into the **Nagaraj judgement**.
- In Nagaraj judgement, apex court while upholding the previous constitutional amendments regarding this issue, put some restrictions on the state that it should:
 - collect quantifiable data showing backwardness of the class and inadequacy of representation of that class in public employment.
 - ensure that efficiency of administration is not reduced while giving promotion.
 - not breach the ceiling-limit of 50% or obliterate the creamy layer or extend the reservation indefinitely.

Related cases and amendments

- Article 15(4) allows State to make special provision for the advancement of any socially and educationally backward classes of citizens or for SCs and STs
- In the Indira Sawhney case (1992), the Supreme Court held that the reservation policy cannot be extended to promotions.
- However, **77th Constitutional Amendment (CA)**, inserted **Clause 4A** in Article 16 and restored provision of reservations in promotions.
- The court in 1990s restored their seniority once promoted at par with the SC/ST candidates who got quick promotions ahead of their batch mates.
- However, **85th CA Act, 2001** gave back “consequential seniority” to SC/ST promotees.

Argument in favour of reservation in promotion

- The makers of the Constitution used the reservation policy for **giving protection to the deprived sections of society due to systemic deprivation of rights, social discrimination and violence**. Besides, the Supreme Court has, time and again, upheld any **affirmative action seeks to provide a level playing field to the oppressed classes** with the overall objective to achieve equality of opportunity.
- The representation of SCs/STs, though, has gone up at various levels, **representation in senior levels is highly skewed against SCs/STs due to prejudices**. Over the years Institutions has **failed to promote equality and internal democracy within them**. There were **only 4 SC/ST officers at the secretary rank in the government in 2017**.
- Overall **efficiency in government is hard to quantify**, and the reporting of output by officers is not free from social bias. For ex. In **Maharashtra**, a public servant was denied promotion because his ‘**character and integrity was not good**’.

Argument against the reservation in promotions

- Provisions under **articles 16(4), 16 (4A) and 16 (4B)** of the Constitution are only enabling provisions, and **not a fundamental right**. In a case the Supreme Court ruled that **no reservation in promotions would be given** in appointment for faculty posts at the super specialty block in AIIMS.
- The **intent of framers of the constitution** behind including reservation policy was **not reservation without merit**.
- **Gaining employment and position does not ensure the end of social discrimination** and, hence, should not be used as a single yardstick for calculating backwardness.
- The reservation in promotion may **hurt the efficiency of administration**.

There is **ambiguity** and **vagueness in promotion process** as of now. Thus, there is a need for a **new, comprehensive law** to be enacted.

1.3. STATEHOOD FOR DELHI

Why in news?

- The ruling Aam Aadmi Party (AAP) has decided to give another push to its demand for full statehood to Delhi with a public campaign.

Why statehood should be granted?

- In 1991, when the **69th Amendment to the Constitution** created the Legislative Assembly of Delhi, the city’s population was much smaller. Today, there are nearly two crore people in Delhi.
- Nowhere in any democracy are two crore people represented by a government with restricted powers.

- When the Union Territories were first created, the idea was to provide a flexible yet transitional status to several territories that joined the Indian. With time, Goa, Manipur, Himachal Pradesh and Tripura have been granted statehood.
- Now, the time has come to enter the second and final stage to create the full State of Delhi.
- **United Nations report** projects that Delhi urban agglomeration will make it the most populous city in the world by 2028.
- An elected government representing a massive population need to have a say in law and order and land management.

Why statehood should not be granted?

- The support for full statehood has not been a national compulsion, but a call fuelled by Delhi's local political ambitions.
- Delhi is the national capital and must necessarily be viewed from the prism of the interests of the entire country.
- Delhi is home to vital institutions such as the president's estate, the Parliament and foreign embassies. All of these infrastructures require special security cover and close coordination with centrally administered agencies such as the Research and Analysis Wing (RAW) and Intelligence Bureau (IB).
- These institutions are the sole responsibility of the Union Government and not of any one particular state legislative assembly
- Indian government must have some territory under its control; it cannot possibly be an occupant or a tenant of a state government
- Many regional parties have expressed their strong reservation to acceding full statehood for Delhi. For them, India's national capital belongs to every citizen of the country and not just those who reside in the city
- Statehood would deprive Delhi of the many advantages it gets as national capital.
 - For instance, the entire burden of policing—involving the coordination of a mammoth staff—is borne by the federal government.

Way forward?

- Overlapping jurisdictions in a national capital is inbuilt and constitutional entities have to manage this reality.
- Provide greater autonomy and reasonably robust fairer power-sharing arrangements among different constituents

Background

- Till 1992, except for a brief interlude, Delhi was a union territory under the complete control of the Government of India.
- Delhi was allowed its 'statehood' early in the 1990s, with a Chief Minister and a popularly elected unicameral legislature though the 'State' remained truncated in its powers.
- But It remained in substance a union territory and in form a State, with the Lt. Governor retained as its chief executive.
- The Chief Minister and his Cabinet made a late entry into space where Lt Governor and several municipal corporations already existed which created friction.
- Many departments of the Centre, State, scores of parastatals and five ULBs (urban local bodies) providing bits of governance in the city.
- It could safely be asserted that Delhi has more government and less governance than any other city or state in the country.

Recent Supreme Court Verdict on Delhi-Centre Power Tussle

- The Supreme Court judgement in the Government of NCT Delhi vs Union of India case, overturned the August 2016 judgment of the Delhi high court, which had ruled that since Delhi was a Union territory all powers lay with the central government, not the elected Delhi government.
- Resolving the dispute over the demarcation of powers between the Union Government and the Government of Delhi, the Supreme Court laid down a few key principles:
 - Delhi government has power in all areas except land, police and public order and **the LG is bound by the aid and advice of the government** in areas other than those exempted
 - The only exception to this rule, it said, was a proviso to **Article 239-AA**, which allowed **the LG to refer to the President any issue** on which there was a difference of opinion with the council of ministers. In such a case, the LG would be bound by the President's decision.
 - Delhi Lieutenant Governor cannot act independently and must take the aid and advice of the Council of Ministers because national capital enjoys special status and is not a full state. Hence, the role of the L-G is different than that of a Governor.
 - It observed that neither the state nor the L-G should feel lionized, but realise they are serving Constitutional obligations and there is no space for absolutism or anarchy in our Constitution.

- For a start, Delhi should demand the urgent revision of the existing constitutional provisions (i.e. 69th Amendment, Article 239) and Rules of Business.
- Given the overlapping and often-contested jurisdictions, it is imperative to strive for a **credible and institutionalised dispute-resolution mechanism** as has been adopted by national capitals all over the world.
 - The existing system of referring the disputes to the office of the president is a failed model that lacks credibility and invariably gets resolved in favour of the national government.
- City-government should have a hand in the running of the local municipal bodies.
 - What is required is an empowered Mayor, performing the functions of a municipal body extending to all such subjects where the GoI does not operate.
- The functions of the parastatals, unrecognised by the Constitution, need to be merged in the ULB. Any such subject/function that operationally is difficult to be merged with the ULB can function under the aegis of the Lt Governor.
- Governance restructuring would need to be done in a manner that accountability in relation to specific functions falls squarely on a single organisation/individual.

1.4. CAUVERY WATER MANAGEMENT SCHEME, 2018

Why in news?

Recently, the Union Water Resources ministry notified the constitution of the **Cauvery Water Management Authority (CWMA)** and the **Cauvery Water Regulation Committee (CWRC)** under **Cauvery Water Management Scheme, 2018**.

Background of Cauvery Water Dispute

- In **February**, the Supreme Court directed the Union government to form the CWMA within six weeks.
- SC while accepting that the **issue of drinking water has to be placed on a “higher pedestal”**, raised the share of Cauvery water for Karnataka by 14.75 tmcft and reduced Tamil Nadu's share, while compensating it by allowing extraction of 10 tmcft groundwater from the river basin.

Composition of CWMA -

- **Chairman** – appointed by the Central Government who is a **senior and eminent engineer** or an **All India Service Officer** with experiences in water resource management and inter-State water sharing issues having tenure of **five years or till sixty-five years of age**.
- **Two whole-time Members** - representing **Central Water Engineering Services (CWES)** and Ministry of Agriculture and Farmers' Welfare respectively for a **term of three years** (extendable upto five years).
- **Six Part-Time Members** – of which two represent Central Government and four from party States.
- **Member Secretary**
- **Head Quarters** of the Authority shall be **at New Delhi** and all **expenses of the Authority** shall be borne by the concerned party states.

Functions of CWMA

- **Monitor and determine the total residual storage**, apportion shares, supervise operation of reservoirs at the beginning of water year (1 June) with the assistance of the Cauvery Water Regulation Committee.
- **Regulate release of water by Karnataka**, at the inter-state contact point at Billigundulu gauge.
- **Advise suitable measures to improve water use efficiency**, by promoting micro-irrigation (drip and sprinkler), change in cropping pattern, improved agronomic practices, system deficiency correction and command area development.
- **Take suitable actions** in case of defaults by party states.

Significance of CWMA

- Unlike the earlier interim arrangements, it is a **permanent body** under the Union Ministry of Water Resources and its decisions are **final and binding** on all the party States.
- **Framework for other similar river water disputes:** the outcome of the functioning of CWMA could contribute to the larger unfinished agenda of formulating a comprehensive policy for inter-state river water cooperation and can address other river water disputes.
- **Provide a stable solution** to the farmers of the region by ensuring an assured, periodic quantum of water for irrigation.

Concerns

- **Forging federal consensus on Centre's role in inter-state rivers-** the states must agree to give the necessary functional space to the Centre as the powers and functions of CWMA are in favour of Central Government under Entry 56 of the Constitution.
- **Political and bureaucratic will power** is extremely necessary for the success of this scheme.
- **Concerns raised by Karnataka:** (a) the "scheme" should be debated in the Parliament, (b) Authority can interfere in deciding the crops to be raised and farmers might take a long time to switch over to modern farming practices, and (c) Situations where Tamil Nadu face floods due to North East Monsoon, releasing water would then result in wastage.

Cauvery Water Regulation Committee (CWRC)

- Head Quartered at Bengaluru, Cauvery Water Regulation Committee (CWRC) would consist of a Chairman and one representative each of the party states, Indian Meteorological Department (IMD), Central Water Commission (CWC) and Ministry of Agriculture & Farmer's Welfare, along with a Member Secretary.
- CWRC would act as a technical arm with following functions:
 - Collecting data regarding levels, inflows, storages and release of water periodically.
 - Preparing seasonal/annual report of the water account for SW monsoon, NE monsoon, Hot weather and submit it to the CWMA.

फाउंडेशन कोर्स सामान्य अध्ययन

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- ▶ करंट अफेयर्स मैगजीन

2. INTERNATIONAL RELATIONS

2.1. INDO-PACIFIC

Why in news?

India, Japan, the US and Australia have reiterated their shared commitment to the Indo-Pacific region in recent past.

Indo-Pacific as the new Geo-Political Construct

The “Indo-Pacific” idea was originally conceived in 2006-07. The term ‘Indo-Pacific’ combines the Indian Ocean Region (IOR) and the Western Pacific Region (WP) – inclusive of the contiguous seas off East Asia and Southeast Asia – into a singular regional construct. Now it has gained eminence due to:

- **Increasing geopolitical connect:** between the Indian Ocean and the western Pacific in both the geo-economic and security dimensions is on the rise and the change in regional nomenclature from Asia-Pacific to Indo Pacific is a better representative of the same.
- **Geo-economic opportunities:** eastward shift of the world’s economic “center of gravity” towards the Asian continent and thus the Indo-Pacific is regarded as a singular and integrated geopolitical construct.
- **Growing Eminence of India:** Even though the “Indo” in “Indo-Pacific” represents the Indian Ocean and not India, the global community expects India to play a major role in terms of ensuring a maritime environment that is conducive for economic growth and development.
- **Politico-military aggressiveness of China:** In the backdrop of China’s string of pearls theory Indo-Pacific presented an opportunity to capitalise on China’s key strategic vulnerability, viz., its energy lifelines transiting the Indian Ocean and to showcase Indian Navy’s capability to moderate China’s behaviour, thereby dissuading its future aggressiveness.

Recent Measures and Policy initiatives:

- **Australia:** In 2013, Australia released its Defence White Paper making it first government articulation of Indo-Pacific and endorsing India’s centrality in the Indo-Pacific construct.
- **USA:**
 - It recently renamed its strategically important Pacific Command (PACOM) as the **U.S. Indo-Pacific Command**, indicating that for U.S. government, East Asia and the Indian Ocean Region are gradually becoming a single competitive space and India is a key partner in its strategic planning.
 - Even 2018 **National Defence Strategy** of US acknowledges Pacific challenges and signals America's resolve and lasting commitment to the Indo-Pacific.



Concept of Indo-Pacific from different perspectives

- **For USA,** it highlights inadequacy of the “Asia-Pacific” term (which means ‘the Asian littoral of the Pacific Ocean’) to meet its geopolitical and foreign policy objectives of maintaining its sphere of influence in face of the Chinese challenge. Secondly it aims to incorporate India into the region-wide security architecture by making it a “net security provider”.
- **For India** it means an extended eastern maritime neighbourhood in tandem with Act East Policy and Indian Navy’s new maritime security strategy to the entire western and south-western Pacific Ocean.
- **China** on its part has not expressed any resentment and may use it to increase its own influence in Indian Ocean especially through BRI.
- **For Japan** it means an enhanced maritime security role in the area in cooperation with India to reduce its seaborne energy and food imports across the IOR
- **For Indonesia:** Possessing substantial potential to become a major maritime power, Indonesia is also likely to be a key player in the process of melting the IOR-WP divide, and thereby reinforcing the ‘Indo-Pacific’ construct as it has coasts facing both the oceans.

- **Japan:**
 - Its Free and Open Indo-Pacific Strategy rests on “two oceans” — Indian and Pacific — and “two continents” — Africa and Asia and will help Japan in preparing to deal with the fast changing global and regional order and threats
- **India:**
 - In Shangri La Dialogue India embracing concept of Indo-Pacific announced that along with key partners in the region—it is committed to a “free, open, transparent, rules-based, peaceful, prosperous and inclusive Indo-Pacific, where sovereignty, territorial integrity and international law, freedom of navigation and overflight are respected.

Future Relevance of Indo-Pacific strategy

- The relevance of the ‘Indo-Pacific’ concept will be enhanced in the future due to the **strengthening linkages** between the IOR and the WP.
- Furthermore, the growing trade and people-to-people connectivity between the IOR and WP countries may bring economic prosperity in the IOR region, and slowly **reduce inequalities** in terms of economic and human development indices.
- China’s Belt and Road Initiative (BRI) and India’s Act East policy may also contribute to **economic integration** of the IOR and the WP.
- Further it will also help in evolving **balance of power in Asia**, and to address the fault-lines therein, with the overarching aim of preserving regional and global stability.
- India and other partners need to demonstrate their ability to enforce UNCLOS otherwise there will be little incentive for rule breakers, like China, to adhere to the norms or respect freedom of navigation.

The emergence of the Indo-Pacific as a geo-strategic concept is a welcome development. However, it needs further diplomatic movement and there needs to be greater clarity on economic issues. Japan and Australia will play an important role in bolstering economic linkages and connectivity and India should also play its part in multilateral cooperation.

2.2. INDIA CHINA WATER RELATIONS

Why in news?

China has undertaken various projects across the border and India has been insisting on greater water cooperation between the two countries.

Status of water cooperation between India-China

The Trans-border rivers flowing from China to India fall into two main groups i.e. The **Brahmaputra river system** on the Eastern side, which consist of river Siang (main stream of river Brahmaputra) and its tributaries, namely Subansiri and Lohit and **the Indus river system** on the Western side consists of river Indus and the river Sutlej. Both countries have signed-

- Memorandum of Understanding upon provision of Hydrological Information of the River Brahmaputra / Yaluzangbu in 2002
- Memorandum of Understanding on Hydrological Data Sharing on River Sutlej / Langqen Zangbo in 2010 and renewed in 2015.
- **Expert Level Mechanism (ELM)** to discuss interaction and cooperation on provision of flood season hydrological data, emergency management and other issues regarding trans-border Rivers in 2006.

WATER POWER

TIBET AUTONOMOUS REGION



Issues in Water cooperation in India China Relations

- **Suboptimal Cooperation:** Currently China only shares hydrological data on the Yarlung Tsangpo/Brahmaputra (YTB) and Satluj during the monsoon season.
- **Differential Approach:** In South Asia, China has been insistent in establishing greater ties with Bangladesh on flood forecasting, water technologies, and water management.
- **Border Dispute:** The discussions over the YTB have often been overshadowed by the border dispute and there has been no progress in discussing more pressing issues of who has the right to how much water and the impact of dams and diversions on the upper reaches of the river.
- **Multilateral Approach:** China's approach to transboundary water sharing is shifting towards multilateral arrangements unlike India which prefers bilateral relations, as it has with Pakistan, Nepal, Bhutan, and Bangladesh.
 - In 2015, China signed the Lancang-Mekong Cooperation (LMC) framework along with five other countries as an alternative to the Asian Development Bank-led Mekong River Commission, which China never signed.
 - The LMC aligns with China's Belt and Road Initiative and focuses on land and water connectivity, besides river management.
- **Projects undertaken by China (See Box)** on Tibetan side without any transparency or information sharing framework.

Chinese projects in Tibet

Tibet is an area rich in natural resources and rightly called Xizang, or "Western Treasure Land" in Chinese. China has undertaken following activities across the border:

- **Water Grab:** China is engaged in the greatest water grab in history by not only damming the rivers (Jiexu, Zangmu and Jiacha) on the plateau.
- **China's 'Gold Rush':** China's has started mineral mining or the "gold rush" as part of its wider efforts in the Himalayas to extract precious metals, rare earths and other resources from Tibetan plateau.
- **Geo-engineering Experiments:** Most rain in Tibet is concentrated in its water-rich southern and south-eastern belts along the international frontiers; the rest of the plateau is dry. Recently there are reports of China's geoengineering experiments to "trigger natural disasters such as floods, droughts and tornadoes to weaken" an enemy in the event of a war.

Need of Greater Collaboration

- **Environmental Pollution:** Due to China's lack of concern for environment and the transboundary impacts, Siang - Brahmaputra's main artery recently turned blackish grey as it entered India.
- **Weakening of Indian Monsoon:** Considering the climate system's global interconnections, geo-engineering experiments in Tibet can bring more rain by sucking in moisture from other regions which would potentially weaken monsoons in India and elsewhere in Asia thus opening a new interventionist frontier.
- **Threat to biodiversity:** Tibet on Chinese side and Himalayan ecosystem on Indian side are one of the world's most biodiverse regions and the reckless exploitation of their mineral and water resources has threatened fragile ecosystems.
- **Warming of Plateau:** Tibet is called the "Third Pole" due to its largest perennial ice mass on the planet after the Arctic and Antarctica but now Tibet warming is at almost three times the global average. It will have major long-term implications for the triple role Tibet plays as Asia's main freshwater repository, largest water supplier and principal rainmaker.
- **Loss of Water Flow:** Climate models suggest that major rivers running off the Himalayas, after increasing flows as glaciers melt, could lose 10-20% of their flow by 2050. This would not only reduce the rivers' capacity to produce electricity, but would exacerbate regional political tensions.
- **Humanitarian Implications:** Any disaster including flash flood, landside, dam burst etc. can cause widespread loss of life, wildlife, livelihoods and basic infrastructure in not only in India's Northeast but also in Bangladesh.

What India needs to do?

- India has also undertaken multiple hydropower projects on the Brahmaputra against Chinese dam-building activities in pursuance of the **international law of 'prior appropriation'**, which states that the first user gets the rights to continue using that quantity of water.
- India further needs to clearly envision the desired end goal and strategic outcomes for dealing with impending water conflicts.

- It also needs to de-emphasise China's role for the time being and **restrengthen its relationship with lower riparian countries** including Bangladesh and restore its image as a responsible upper riparian.
- India needs to raise the issue proactively in **informal meets** such as Wuhan Summit and also mirror its strength and firmness in negotiations with China on water rights, as it did in the case of the Doklam stand-off and in opposing the Belt and Road Initiative, rather than projecting itself as a victim.
- Further there is need to build an **Himalayan Charter** to delve on areas of mutual cooperation and create a **Himalayan Council** to work on specific issues related to the future of the Himalayas as discussed in third Himalayan Consensus summit in Nepal.
- Further there is need of improving **diplomatic communication**, more **transparency** by way of all-year hydrological sharing of data and exchange of information regarding infrastructural development in the area and developing effective and innovative frameworks of resource management including all stakeholders.
- Simultaneously **International pressure** needs to be mounted on Beijing to refrain from activities that cause "decline of Tibet's natural resources" and "environmental impairment". Asia's ecological interests cannot be safeguarded unless China is forced to respect international environmental standards.

2.3. INDIA-CHINA-NEPAL RELATIONS

Why in news?

China has proposed a new dialogue mechanism with Nepal that would also involve India during the visit of Nepal's Prime Minister to China.

What is new 2+1 Dialogue mechanism?

- **Two Plus One** format for dialogue as proposed is **different from a trilateral mechanism**. Under the Chinese proposal, **China and India can jointly conduct a dialogue with a third regional country** i.e. it is **not Nepal specific** and can be applied to **any other country in South Asia**.

Need of such mechanism

- Nepal's developmental needs are immense and needed **meaningful and mutually beneficial economic partnership** with both its neighbours India and China which are rising in global and regional stature.
- U.S. administration has started **global trade restrictive policies** which may have adverse impact for developing and emerging economies. This kind of platform will **help mitigate the impact of such policies on countries like India and China**.
- Nepal can move from the state of **a land-locked to a land-linked country** through the development of adequate cross-border connectivity and can serve **as a bridge between two arch rivals**.
- China and Nepal have proposed developing a **multidimensional trans-Himalayan connectivity network**. Bringing India on board is essential for success of such projects related to regional connectivity.

Challenges in realization of such platform

- Chinese economic, military, and strategic engagement in Nepal is sharply increasing with new areas of cooperation, making India uncomfortable. **India views Nepal as its traditional sphere of influence**. Also Nepal has been trying to change the old pattern of a **heavy economic dependence on India**.
- Nepal has extended support to China's **Belt and Road Initiative (BRI)** which India has opposed staunchly.
- Nepal-China Cross Border Railway line stretching from **Keyrong to Kathmandu and from Kathmandu to Pokhara and Lumbini**, close to the Nepal-India border, **would affect India's security interests**.
- Though **China Nepal** are talking about broader connectivity, China has opened very few border points. **The Tatopani crossing, the oldest and biggest trading point** between the two countries, has been closed for three years.

Changing Dynamics of India China Nepal Triangle

India's advantage

- Nepal geographically is surrounded by India on three sides. It is seen as a buffer state between India and china.
- **Two thirds of Nepal's global trade** is with India and over **90 per cent of their exports/imports go through India**. Millions of Nepalese live and work in India, and hundreds of thousands criss-cross the border every day. Besides Indian goods are much cheaper than Chinese exports.

China Card

- India's relation with Nepal has deteriorated after Nepal promulgated the new constitution in 2015. **The demand of madhesi people who live in tarai region were ignored in new constitution.** For almost six months there was blocked in India-Nepal border. **Continuous blockade have generated anti-India feeling in Nepal.**
- **China** provided Nepal with fuel supply at the time and after that China has offered Nepal, energy and infrastructure deals, rail links, a free trade agreement and a trade and transit treaty.
- **Through these agreements Nepal tried to send a strong message to India** that Nepal has a viable option in mobilizing support from China to counter any pressure generated from India.
- Increasing Chinese investment and co-operation with Nepal will **reduce dependence of Nepal on India.** This may have serious strategic implication for India.
- Nepal will **actively participate in China's Belt and Road initiative** ignoring the India's sovereignty contention of China Pakistan economic Corridor.
- Nepal and China are also exploring the possibility of a free trade agreement and China is also pressing for a Peace and Friendship Treaty.
- Even cooperation between Nepal Army and Chinese People's Liberation Army is also on rise, after their first joint military exercise last year.

Way forward

- There is a set pattern of the **Nepal flashing the China card more frequently in recent pasts.** Its neighbourhood policies vis-à-vis India and China are changing. India, therefore, has to deal with its immediate neighbours with **prudence and sensitivity** and ensure that they are not alienated.
- Nepal must act **as a bridge between two rising nations** and help bring co-operation prosperity and peace in the region.

2.4. INDIA-SEYCHELLES RELATIONS

Why in news?

Seychelles' President Daniel Faure visited India for bilateral talks in the backdrop of **the Seychelles' parliament refusal to ratify an Indian naval base plan on the Assumption Island.**

Areas of co operation

- India-Seychelles diplomatic relationship was established in **1976** when Seychelles got independence and the two countries share close relationship based primarily on the **twin planks of maritime security and co-operation in developmental activities.**
- India and Seychelles are working together to bolster the **island nation's need for maritime security in Indian Ocean Region (IOR) and making the IOR safe for development and trade activities.** Besides cooperation in **counter piracy and counter terrorism in high seas** are also going on which is critical for India's extended maritime security.
- Under Development cooperation several initiatives like Training **under Indian technical and economic co-operation (ITEC) Programme**, provision of patrol vessels, hydrographic surveys etc. have been taken.
- **Defence Co-operation**
 - Indian navy has deployed **maritime reconnaissance aircraft to Seychelles for surveillance of the island nation's Exclusive Economic Zone.**
 - Besides, **Joint Military Exercise Lamitye** also being conducted since **2001.**

Importance of Seychelles for India

- Seychelles forms a crucial part of Indian Ocean Region where India is trying to increase its influence by extending economic, military and diplomatic cooperation and through strategic partnership.
- Apart from its **strategic location on international sea lanes of communication, Seychelles is a leader among SIDS group (Small Island Developing States)** which has multifold areas of convergence with India.
- It is a **leader in advancing the concept of 'blue economy'**, which covers several aspects like environment, hydrocarbons, marine economy, renewable energy and exploration of continental shelf.

- This island nation also forms **the entry gate to eastern Africa** with which India has had historical socio-commercial links and now forms a huge market for Indian firms.
- **Countering Chinese Influence**
 - China has begun making inroads into these island nations with infrastructure projects and other commercial investments.
 - Recent **Maldives India fallout regarding job visas and lease of Hambantota port by Sri Lanka to China** has made it imperative for India to actively engage with this island
- Seychelles have supported India in international fora, including **endorsing India's permanent membership of an expanded UN Security Council.**

Importance of India for Seychelles

- India has always been there to help for the country in any crisis. Indian navy conducted **“Operation Flower Are Blooming” in 1986** to avert a coup and helped the island achieve political stability.
- India provides **multi-dimensional assistance to Seychelles. More than 1% of population is trained under ITEC programme** of India.
- India has been instrumental in establishing **communication facilities across Seychelles** as a part of the **Pan African e-Network project** between India and the African Union.
- The **Indian Diaspora in Seychelles consists of approx 8% of the Seychelles population** which has been influential in forging **socio-cultural and economic ties** between two countries.

Issues

- Huge Chinese investments in several infrastructure projects are diminishing Indian influence in the island nation.
- **Seychelles also offered refueling and docking facility to Chinese ships** coming from Djibouti naval base which India is apprehensive about.
- **Assumption island naval base:** The pact to build a naval base on the island had been under discussion since 2003 and was finally signed after amendments in January 2018. But national assembly of Seychelles refused to ratify the project as it would draw the country in the middle of India-China rivalry. However, now both the countries have agreed to work on the project **keeping each other's interest in mind.**

Way Forward

- India must continue **working in area of mutual interest like counter terrorism, piracy** etc. and must work out the contentious issues with dialogue.
- India's priority should be to engage with the island nation and **counter any economic advantage that China can offer.**
- India must deploy **greater military assistance** like supply of naval equipment and training to defence forces for counter piracy and enhanced security of EEZ of the Seychelles.

2.5. INDIA-MALDIVES

Why in news?

India has reduced the amount of restriction-free exports of essential commodities permitted to Maldives recently

India-Maldives relations

- India established **formal diplomatic relations** with Maldives after the independence of Maldives from the British rule in 1966.
- India has been a friend in need of people of Maldives:
 - Operation Cactus was **India's military aid** of 1600 soldiers to Maldives to fight the armed attack of the Liberation Tigers of Tamil Eelam (LTTE) supported rebel groups in 1988 for an attempted coup.

India's stakes in Maldives

Maldives is strategically located in the Indian Ocean, and India being a major power in the Indian Ocean region has the highest stake in the stability of Maldives for various reasons like-

- Securing sea lanes of communication, Fighting piracy and sea based terrorism,
- Countering China's string of pearls policy,
- Making Indian ocean a conflict free zone and restoring its status as sea of tranquil,
- Exploring blue economy and Enhancing trade.
- Security of Indian expatriates working there.

- India **provided bottled water** through its helicopters to Maldives when its only water treatment plant collapsed in December 2014.
- In 2016 Commonwealth Ministerial Action Group (CMAG) meeting India prevented countries from executing punitive sanctions due to failure in creating an ‘Inclusive country’ and a ‘Genuine Democracy’.
- India has also undertaken projects in Maldives such as:
 - ✓ Indira Gandhi Memorial Hospital (IGMH): The 200-bed state-of-the-art hospital is considered a premier institute
 - ✓ Faculty of Engineering Technology (FET) which has a capacity to train several hundred students a year.
 - ✓ **India-Maldives Friendship Faculty of Hospitality & Tourism Studies**
- India has provided **liberal economic aid** and cooperated with Maldives for improving its Infrastructure.
- India shares very **close military ties** with Maldives by having two helicopter bases, integration of radars and Indian Coast Guard surveillance along Maldivian coast. India also aims to remain as a net security provider to Maldives.
- India also promotes **people to people contacts** through air connectivity, education linked scholarship programs and cultural exchanges. Indians constitute second largest expatriate community in Maldives with approximate strength of around 22000.

Contemporary situation

- Under the current regime of Maldives, since 2013, India-Maldives relations have been deteriorating.
- Maldives’ closeness to China has increased as big infrastructure projects have been given to Chinese companies and Chinese naval ships were allowed to dock in Male.
- Further Maldives has signed its first ever **Free Trade Agreement (FTA) with China**. FTA was signed even after President Yameen, during a visit to New Delhi, said that his country would sign an FTA with India first. FTA will draw the Maldives more closely into China’s security net considering:
 - China already has an FTA with Pakistan, and is exploring or negotiating FTAs with Bangladesh, Sri Lanka and Nepal.
 - The Maldives has also agreed to become a partner in China's maritime silk route.
- Bilateral diplomatic relations between India and Maldives have taken a beating since Maldivian President Abdulla Yameen **declared a state of emergency in response to a** Supreme Court order quashing the conviction of former President Mohamed Nasheed and eight other opposition politicians on various charges, including terrorism.
- Maldives with China’s backing has cracked down on the opposition and free speech and has asked India not to interfere in its internal matters.
- Maldives recently also asked **India to take back one of two naval Dhruv** Advanced Light Helicopter (ALH) New Delhi had gifted to Male and has cancelled work permits of many Indians indicating further deterioration of ties between the two countries.
- Consequently, India has lowered the **limits on the export of certain essential commodities** such as potatoes, onions, and eggs to the Maldives which were decided under an earlier agreement in 1981 and may trigger food shortages in the country.

India’s stake and Concerns

- The first gesture of India’s disappointment over the happenings in archipelago state is that despite ‘Neighborhood first’ policy, Indian PM skipped Maldives in his Indian Ocean Tour due to **cancellation of GMR contract** by Maldives later given to China and country’s approach towards restoring democracy but this has only resulted in its tilt towards China.
- India is equally concerned over **increasing radicalization of youth** in Maldives which has security implications for India. Maldives has also decided to sell or lease an atoll to Saudi Arabia which will set up Madrasas thus aggravating Wahhabism in the country.
- The current emergency situation is also a very serious as **democratic institutions are being subverted** which would make it difficult for Indian Government to negotiate a better relation with Maldives, this calls for India’s intervention in Maldives.

- But unlike India's operation Cactus, where request for intervention was from the sitting president, in the present case the demand for intervention is from opposition parties. The situation does not meet the requirements articulated by the 'responsibility to protect' doctrine, under Article 2 of the UN charter and India's traditional policy of non-intervention in the internal affairs of other sovereign countries.

Way forward

India should involve in **political mediation** between the government and Opposition, to restore order in Maldives and facilitate conditions for the upcoming elections due in next few months. A democratic Government would be in the best of interests for both Maldives as well as India. India must get considerable international support for the same.

2.6. INDIA MONGOLIA

Why in news?

Mongolia has launched construction of its first strategically important oil refinery funded by India in southern Dornogovi province.

More about the news

- Supported by a \$1 billion soft credit line from India announced in 2015, the new refinery is as part of India's effort to develop further ties with the landlocked country and help reduce its energy dependence on neighbouring China and Russia.
- The refinery, planned for completion in late 2022, will be capable of processing 1.5 million tonnes of crude oil per year and will meet Mongolia's demand for gasoline, diesel, aviation fuel and liquefied petroleum gas (LPG). The refinery will process Mongolia's own crude oil, which is now sold to China.

India Mongolia Relations

Mongolia, a large landlocked country wedged between giants China and Russia, has a population of just 3 million. Almost half its people live as nomadic stock herders.

- **Diplomatic Relation:** India established diplomatic relations with Mongolia in 1955. In 1991, India supported Mongolia's membership to Non-Aligned Movement (NAM). Mongolia along with India and Bhutan co-sponsored famous UN Resolution for the recognition of Bangladesh as an independent country in 1972.
 - In 2011, a **line of credit of US\$20 million** was announced for setting up of "Centre of Excellence for IT, Communication & Outsourcing" in Ulaanbaatar.
 - In 2015, Indian PM visited Mongolia signed a Joint Statement on 'Strategic Partnership' between India and Mongolia.
 - Further MOU on Cooperation in the field of Border Patrolling & Surveillance, MOU on cooperation between National Security Councils, Revised Air Services Agreement were also signed
- **International Cooperation:** Mongolia also supports India for becoming a **permanent member of a reformed and expanded UNSC**. Further India and Mongolia declared support to each other for UNSC non-permanent seats respectively for terms 2021-22 and 2023-24.
- **Defence Cooperation:** There is India-Mongolia Joint Working Group for Defence cooperation which meets annually. Joint India-Mongolia exercise '**Nomadic Elephant**' is held annually and India is a regular participant in the multilateral exercise '**Khan Quest**' held in Mongolia. There is also an agreement for cooperation for border patrolling between the two countries.
- **Energy Cooperation:** A Working Group for cooperation in the field of nuclear energy has been set up between the respective agencies of the two countries i.e. the DAE and the Nuclear Energy Agency of Mongolia.
- **Commercial, Economic and Technical Cooperation:** Main items of exports to Mongolia include medicines, mining machinery and auto parts, etc. Imports from Mongolia include raw cashmere wool.
- **Humanitarian Assistance:** Humanitarian assistance worth US\$20,000 for the children of herders in Sukhbaatar Aimag (severely affected by harsh winter 'Zud') was also provided in 2017.
- **Other Area:** India also offers scholarships to Mongolian students under Indian Technical and Economic Cooperation programme, also known as ITEC, and through scholarships offered by the Indian Council of Cultural Relations.

Challenges

- **Connectivity** with Mongolia is also a big challenge for India as it is a **landlocked country** sandwiched between two giant neighbours. Only recently India and Mongolia have agreed to explore the possibility of launching direct air connectivity between New Delhi and the Mongolian capital Ulaanbaatar.
- Mongolia's is highly **dependent on China and Russia for trade and investment** which could pose challenges for India in making significant inroads into Mongolia.
- Mongolia location is in close **proximity to China's volatile regions**. Any, internal developments in China will also have implications for both Mongolia and India.
- Even domestically Mongolia is **grappling with corruption, environmental degradation, unemployment and underemployment and lack of effective women participation** in economy mainly due to predominance of nomadic herding in the country.

Way Forward

- Mongolia plays a key role in Asian energy transportation as it falls on the crossroads of major energy supply routes.
- India also needs to factor Mongolia in its Russia policy as well, for safeguarding interests in the Asia-Pacific region. India's benign presence in Mongolia is desirable for India's future interest in Russia's resource-rich trans-Siberia and Far East.
- To preserve and promote the common heritage of Indo-Mongolian culture is important. This should serve as the basis for nurturing and pursuing future common interests.

2.7. US EXTRATERRITORIAL SANCTIONS

Why in News?

USA has recently imposed several extraterritorial sanctions targeting Russia and Iran which would have direct ramifications for India.

Recent US extraterritorial Sanctions and their potential impacts on India:

1. USA's withdrawal from Joint Comprehensive Plan of Action (JCPOA)

- USA imposed unilateral sanctions on Iran after its withdrawal from Iran Nuclear Deal. This has increased oil prices, foreign exchange outflows, weakened Rupee value and would affect India's oil trade with Iran which was its third **biggest source of oil in 2017**.
- It may also **affect the progress of the International North South Transport Corridor** and the **Chabahar port** in Iran which India sees as a gateway to Afghanistan and Central Asia bypassing Pakistan.
- India maintained that all the parties concerned should engage constructively to resolve the Iran issue peacefully and that Iran's right to peaceful use of nuclear energy must be ensured.
- In 2005 Tehran cancelled a long-term LNG deal favourable to India after it voted against Iran in the International Atomic Energy Agency's governing board, under US pressure.
- India was forced to significantly slash Iranian oil imports between 2012 and 2015 and paid Iran in rupees or initiated barter trade. India might have to readopt those measures now.

2. US sanctions towards Russia, Iran and North Korea using CAATSA

The US is ingeniously employing **extraterritorial sanctions to advance its geopolitical and commercial interests to boost its own arms sales**.

About Extraterritorial/Secondary Sanctions:

These are the sanctions that are designed to restrict the economic activity of governments, businesses, and nationals of third countries which are considered as a violation of their sovereignty and international laws.

More about Countering America's Adversaries through Sanctions Act (CAATSA)

- Enacted on August 2, 2017, it aims to counter the aggression by **Iran, Russia and North Korea** through punitive measures.
- **Title II of the Act** deals with sanctions on Russian interests such as its oil and gas industry, defence and security sector, and financial institutions, in the backdrop of its military intervention in Ukraine and its alleged meddling in the 2016 US Presidential elections.
- Under the Act, the **Department of State** has notified almost all major **39 Russian entities** from defence and intelligence sector, dealings with which could make third parties liable to sanctions.

- CAATSA is likely to affect India's arms procurement from Russia in a number of ways-
 - India's planned procurement from Russia, particularly the **S-400 Triumf air defence system worth \$4.5 billion**, Project 1135.6 frigates and Ka226T helicopters, would **come under the immediate scanner of US authorities**.
 - It would **affect all the joint ventures (JVs)** between Indian and Russian defense companies for instance **Indo Russian Aviation Ltd, Multi-Role Transport Aircraft Ltd and Brahmos Aerospace** impacting **indigenization and self reliance efforts** of India under its Make in India programme.
 - It would also **affect India's purchase of spare parts, components, raw materials and other assistance for which Indian entities are dependent on Russia** for maintenance of existing equipment.

Potential Impacts of these sanctions on India-US relations

- **Heighten India's traditional insecurity about the US** as a reliable partner impacting New Delhi's defence and security cooperation with Washington, for instance, US designating India as a Major Defence Partner.
- **Huge loss for the American Companies-** As per the MoD's existing **Guidelines on Penalties in Business Dealings with Entities**, reneging of any contractual obligations might attract either suspension or ban of the concerned American companies from taking part in several mega procurement contracts that is being aggressively pushed through its **newly announced Strategic Partnership (SP) model** as part of its Make in India and diversification policies.

Way Forward

- As a sovereign country, India cannot be dictated regarding its defence cooperation or trade ties with any other nations. This was highlighted by Prime Minister at the recent Shangri La Dialogue when he mentioned that India favoured **an open and stable trade regime**. Similarly, External affairs minister emphasized that **"India followed only UN sanctions, not unilateral sanctions of any country"**.
- As these sanctions violate **international law, the UN Charter and WTO rules**, India along with other nations must use **diplomatic measures**, including taking US to the WTO dispute-resolution body and introducing a UN General Assembly resolution against unlawful extraterritorial sanctions.
- India should include provisions in its existing guidelines for penalties in business dealings, banning companies of countries resorting to extraterritorial sanctions on the lines of EU which would update a **"blocking statute"** framed in 1996 to protect European firms against US sanctions.
- The US must realize the importance of India's military and economic growth if Washington wants a strong India defending and strengthening the liberal order in Indo- Pacific. It should work out ways in which these sanctions have little impact on India.

2.8. SHANGHAI COOPERATION ORGANIZATION

Why in news?

Shanghai Cooperation Organization (SCO) summit was held in **Qingdao, China**.

Key takeaways of the meet/ Qingdao declaration

- It reaffirmed the resolve to fight **terrorism, separatism and extremism** and called for a **unified global counter-terrorism front under the coordination of the U.N.** It also endorsed the demand for **the UN Comprehensive Convention on International Terrorism**.
- The SCO leaders adopted a **Joint Appeal to Youth** to counter the radicalization from extremist ideologies.
- It emphasized the importance of **comprehensive measures to reach a peaceful settlement** of international and regional conflicts.
- India **refused to endorse the ambitious Chinese Belt and Road Initiative (BRI)**. Being **the lone dissenting voice against the project** in the joint declaration it said that India welcomes connectivity projects that **respect the sovereignty and territorial integrity of nations**.
- India coined **SECURE strategy** for comprehensive security in the SCO region.

SECURE Strategy

- S- Security of citizens
- E- Economic development for all
- C- Connecting the region
- U- Uniting our people
- R- Respect for sovereignty and territorial integrity
- E- Environmental protection

- The declaration also showed its **support for the Iranian nuclear deal** and stressed on to consistently implement the **Joint Comprehensive Plan of Action on the Iranian nuclear programme**. Iran is presently an observer member of the SCO.

Shanghai co-operation Organization (SCO)

- This is Eurasian **political, economic, and security organization formed in 2001** and headquartered in **Beijing**.
- It owes its origin to its predecessor **Shanghai Five**.
- Its driving philosophy is known as **The “Shanghai Spirit”** which emphasizes harmony, working by consensus, respect for other cultures, non-interference in the internal affairs of others, and non-alignment.
- **Culture has become an important element** of the SCO, attuned to the group’s search for an **inclusive Eurasian identity**
- SCO comprises eight-member states, **India, Kazakhstan, China, Kyrgyz Republic, Pakistan, Russian, Tajikistan and Uzbekistan**.
- This year meet is **India’s first participation in the summit as a full-time member**. India, along with Pakistan, became full-time members during the **Astana summit in Kazakhstan** in June 2017.
- Besides it has **4 observer states and 6 dialogue partners**.

Shanghai Five

- It was a multilateral forum founded by 5 countries **China, Russia, Kazakhstan, Kirghizia, and Tajikistan in Shanghai in 1996**.
- It emerged from **a series of border demarcation and demilitarization talks** between the four former Soviet republics and China.

Significance for India

- The SCO’s main objective of **working cooperatively against the “three evils” of terrorism, separatism, and extremism** is in consonance with India’s interests.
- With **almost half of world population** the group has potential to boost tourism sector of the country. Presently tourists from SCO countries constituted **only 6% of India’s total tourists, which can be doubled to 12%**.
- Regular participation in the meetings of **Regional Anti-Terrorist Structure (RATS)** and joint military exercises will help **enhance combat capabilities and intelligence sharing**.
- It will help revive India China relation especially after Doklam issue. On the sidelines, China agreed to again provide India **hydrological data of the Brahmaputra River in flood season** and to **import non-Basmati rice from India** which is likely to bridge the ballooning trade deficit to a certain extent.
- It can be seen as **an opportunity for the India and Pakistan to cooperate** on issues of mutual interest without bringing in their bilateral disputes.
- It will give India **fresh leads to engage with Central Asia**. Apart from Trade with Landlocked countries like Uzbekistan through the Iranian port of Chabahar, the cultural connect and people to people engagement will be enhanced.

Regional Anti-Terrorist Structure (RATS)

- It was established under the aegis of **SCO in 2002**.
- It is mandated for **counter terrorism activities, collecting military intelligence and security** of the SCO region.
- **The Executive Committee of the RATS** is the permanent body of the SCO based in **Tashkent**.

Challenges

- **India has again refused to endorse the BRI project**. Without its participation the success of project cannot be ensured. Besides, Military standoff at **Doklam damaged the India China relations**.
- **India and Pakistan** relations have always been under strain due to **Kashmir issue**. Without solving it, Mutual cooperation between them cannot be expected.
- The US has imposed sanctions on Russia under **The Countering America’s Adversaries Through Sanctions Act (CAATSA)**, which affects **Indian defence purchases** from its strongest defence partner.
- The **India-US-Japan-Australia quadrilateral** has also been revived recently against the backdrop of Chinese assertiveness in the Indo-Pacific.

2.9. IBSA DECLARATION FOR SOUTH-SOUTH CO-OP

Why in news?

Recently, at a **Ministerial meeting of IBSA in Pretoria, South Africa**, Foreign Ministers of India, Brazil and South Africa (IBSA) adopted a declaration to contribute to greater understanding of development and South-South Cooperation (SSC).

Background About South-South Cooperation (SSC)

- South South Cooperation (SSC) is defined as the **exchange and sharing of developmental solutions among countries in the global south**.
- The formation of SSC can be traced to the **Asian–African Conference that took place in Bandung, Indonesia, in 1955** which is also known as the **Bandung Conference**.

About the IBSA Declaration on South-South Cooperation (SSC)

The declaration calls for the following Principles and basis for South-South Cooperation:

- **SSC as a common endeavour of peoples and countries of the South.** It notes the shared histories, understanding and beliefs and developmental experiences of global south.
- **Developing Countries as developing Partners:** Developing countries engaged in SSC are not donors and recipients but developing partners.
- **Solidarity and the spirit of sharing** are the primary motivations for SSC.
- **Voluntary in nature:** SSC is voluntary in nature and not obligatory like Official Development Assistance (ODA).
- **Demand driven process:** Partner countries determine the priorities in the SSC projects. Primary responsibility towards development rests with the States themselves under their ownership and leadership.
- **Respect for national sovereignty** is at the core of SSC. It is guided by principles of respect for national sovereignty; national ownership and independence; equality; non-conditionality; non-interference in domestic affairs; and mutual benefit.
- **Complements North-South Cooperation:** South-South Cooperation serves as a complement to and not as a substitute for North-South cooperation, in supporting the acceleration of the development agenda. It calls upon the global North to honour its ODA commitments fully, scale up existing resources and commit additional resources to provide the necessary means to achieve the goals of the Paris Agreement on Climate Change as well as implementing SDGs.

INDIA-BRAZIL-SOUTH AFRICA (IBSA) DIALOGUE FORUM

- **IBSA Dialogue Forum** is an international tripartite grouping for promoting international cooperation of India, Brazil and South Africa.
- IBSA was formally established by the **Brasilia Declaration of 6 June 2003** by external affairs ministers of India, Brazil and South Africa.
- It represents three **important poles for galvanizing South-South cooperation** and greater understanding between **three important continents of the developing world** namely, Africa, Asia and South America, facing similar challenges.

IBSA Mechanism for Development Cooperation - IBSA Fund for the Alleviation of Poverty and Hunger

- It was set up with the objective of facilitating the execution of human development projects to advance the fight against poverty and hunger in developing countries.
- Each member country contributes **\$1 Million annually** to this fund.
- The IBSA Fund is managed by the **United Nations Office for South-South Cooperation (UNOSSC)**.
- With a **cumulative contribution of \$35mn**, IBSA Fund has thus far partnered 19 countries from the Global South for implementing 26 projects over the last decade. 62.4 percent of the IBSA Fund has been devoted to Least Developed Countries (LDCs).

2.10. ORGANISATION FOR THE PROHIBITION OF CHEMICAL WEAPONS (OPCW)

Why in news?

OPCW has been granted new powers to assign blame for attacks using banned toxic materials.

More on news

- Until now OPCW had **limited power** to only send teams to places to collect samples and draw conclusions whether the chemical weapons attack had happened or not.
- It did not have powers to identify the perpetrator (country or non-state actors) of the chemical weapons' attacks.
- The British-led motion was supported by the United States and European Union, but opposed by Russia, Iran, Syria, and their allies.
- However, India voted against the decision because
 - India asserts that the consultations conducted by the sponsor on the draft decision with far reaching importance and implications were incomplete.
 - The major concerns of India have not been addressed.
 - India believes there is too much powers wielded in the hands of the Director General, leading to the partisan use of the institute.

OPCW

- It was established in the year 1997 with headquarter at The Hague, Netherlands.
- It is the implementing body for the **Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons**.
- The OPCW Member States share the collective goal of preventing chemistry from ever again being used for warfare, thereby strengthening international security.
- To this end, the Convention contains four key provisions:
 - destroying all existing chemical weapons under international verification by the OPCW;
 - monitoring chemical industry to prevent new weapons from re-emerging;
 - providing assistance and protection to States Parties against chemical threats; and
 - fostering international cooperation to strengthen implementation of the Convention and promote the peaceful use of chemistry.
- It has membership of 193 countries.
 - India is a member.
 - Israel has signed but not ratified the Convention. Egypt, North Korea, Palestine and South Sudan have neither signed nor acceded.
- The Conference of the States Parties is the plenary organ consisting of all members of the OPCW having equal voting rights. It has the general power to oversee implementation of the Convention
- OPCW has reached a major milestone of destroying over 90% of the stockpile of the chemical weapons and was awarded **2013 Nobel Peace Prize** for its extensive efforts to eliminate chemical weapons.
- **The OPCW- The Hague Award**- It was established to honor select individuals and institutions by highlighting their exceptional contributions towards the goal of a world permanently free of chemical weapons.

2.11. AIIB ANNUAL MEETING AT MUMBAI

Why in news?

Recently, third annual meeting of AIIB was held in Mumbai.

Highlights of the meeting

- The meeting was **jointly held by** The Department of Economic Affairs and the Asian Infrastructure Investment Bank (AIIB).
- **Theme of the meeting** was “Mobilizing finance for Infrastructure: Innovation and Collaboration” which recognises the vital role of private sector in bridging infrastructural gap.
- During the event **Indian Infrastructure Expo 2018** was also held with an objective to offer companies from public and private sector to showcase their latest solutions, technologies and offerings in the realms of infrastructure project development and delivery.
- The next annual meeting of AIIB will be held in Luxembourg in 2019.

Asian Infrastructure Forum

- During the annual meeting of AIIB, **Asian Infrastructure Fund** was also launched.
- It will **gather infrastructure practitioners** in a practical and project driven discourse, focussed on matching finance to critical infrastructural needs.
- The forum will focus on infrastructure funding w.r.t. **fintech and green finance** and also focus on creating business development opportunities for participants.
- During the inaugural meeting of the forum workshops were held on transport, Energy, Connectivity, Sustainable Cities etc.

Asian Infrastructure Investment Bank

- It is a multilateral development bank with a mission to improve social and economic outcomes in Asia and beyond.
- It was established in December 2015 but commenced operation in January 2016 and is headquartered in Beijing. Currently it has 86 members with India as a founding member.
- India holding about 8.99% stake and 7.5% vote is the second largest shareholder in AIIB with China holding 32% being the largest.
- So far AIIB has approved 23 projects with a total funding of USD4.22 billion. Recently it also proposed to invest USD200 million in the **National Infrastructure Investment Fund (NIIF)**.

2.12. SINGAPORE SUMMIT

Why in news?

US President Donald Trump and North Korea leader Kim Jong Un created history by coming together at the US-North Korea summit held in Singapore, which resulted in the signing of a “comprehensive document”.

Background

- North Korea has founded its regime’s stability on **Byungjin policy**, i.e. pursuing economic development and nuclear weapons programme simultaneously.
- The recent thaw in relations had been aided by attempts by both North and South Korea to restore normalcy on the divided peninsula, beginning with cordiality during the Winter Olympics and then a meeting between the two Korean leaders.
- Suspension of the annual military exercises by USA and South Korea took place prior to the visit.
- For its part, the North has announced the release of three American prisoners.
- North Korea had also announced to destroy its Punggye-ri nuclear testing zone.

Outcomes

- It marks the establishment of new US-DPRK (Democratic People’s Republic of Korea) relations.
- US had committed to provide security guarantees to North Korea and end US-South Korea Joint war games.
- Reaffirming the **Panmunjom declaration**, Chairman Kim committed to work towards complete denuclearisation of the Korean Peninsula. This can reduce the dangers of proliferation of nuclear weapons in future.
- This opens the doorway for the reunification of the Korean peninsula in the long run.

- However, joint statement issued by the two leaders was **brief, vague and generic** with probable differences in interpretations of denuclearisation by both parties.
- Also, sanctions on North Korea also continue at present, and South Korea and Japan not being part of the process was a matter of concern.

Geopolitical impact for North East Asia

- The suspension of joint military drills between the US and South Korea and desire to eventually pull out some of its 28,500 troops in South Korea has **created concerns regarding USA's security provider role in North East Asia.**
- Japan is feeling marginalized given Trump's "America First" attitude and the situation could eventually lead to **Japan and South Korea acquiring their own nuclear deterrent** within the American alliance system.
- East Asia may be on the cusp of a major strategic shift, comparable to the 1972 U.S. opening to China led by then-president Richard Nixon
- **China can be the big winner** as a reduction of US might in North East Asia and the widening gap between the US and its allies serve Beijing's interests.
- **For India,** It could **benefit in ensuring a new market in the East Asia** which is significant in the wake of the government's 'Act East policy'. It also reduces **the threat from the North Korea-Pakistan** nexus which emerged when in the 1990s nuclear technology was indirectly transferred between Pakistan and North Korea.

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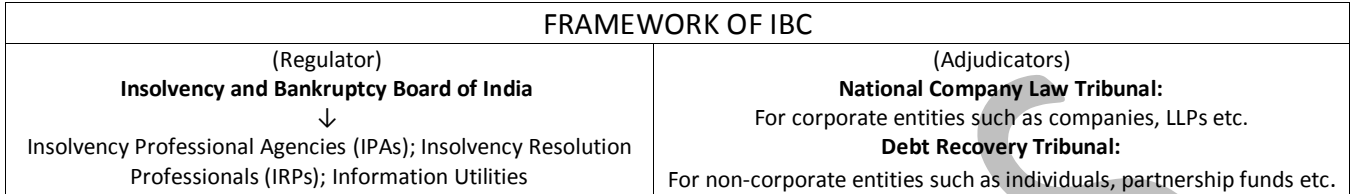
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3. ECONOMY

3.1. INSOLVENCY AND BANKRUPTCY CODE

Why in news?

One-year data on implementation of the Insolvency and Bankruptcy Code (IBC) since December 2016 till December 2017, detailing cases filed, resolved and under-process, was released recently. Further, the President promulgated the IBC (Amendment) Ordinance 2018 in the first week of June.



HOW IT CAME ABOUT

2014

10 JULY
Finance Minister Arun Jaitley, in his 2014-15 budget speech, says the government intends to develop an entrepreneur-friendly legal bankruptcy framework.

AUGUST
The government sets up the bankruptcy law reforms committee (BLRC) led by former Union law secretary T.K. Viswanathan.

2015

FEBRUARY
BLRC submits its interim report to the government.

4 NOVEMBER
BLRC submits final report. The first part of the report lists the rationale and recommendations, and the second is the comprehensive draft insolvency and Bankruptcy Bill.

2016

11 MAY
Parliament passes the Insolvency and Bankruptcy Code, 2016 putting in place and ecosystem with a bankruptcy regulator, insolvency professionals and agencies, an adjudicating authority and information utilities.

22 SEPTEMBER
The government sets up the Insolvency and Bankruptcy Board of India (IBBI), appointing M.S. Sahoo as the chairperson of the regulator.

22 - 30 NOVEMBER
The IBBI notifies for insolvency professional agencies (IPA), insolvency professionals (IP), corporate insolvency resolution process, and rules for application to adjudicating authority under the bankruptcy code. It registers three IPAs and 18 IPs enrolled with the agencies.

1 DECEMBER
The IBBI becomes functional under the bankruptcy code.

15 DECEMBER
The National Company Law Tribunal (NCLT) and National Company Law Appellate Tribunal (NCLAT) take over corporate insolvency matters. The board also notifies regulations for liquidation process.

2017

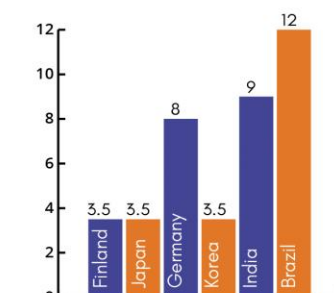
17 JANUARY
The IBBI seeks public comments on the report and draft regulations on information utilities.

WHY IT CAME ABOUT

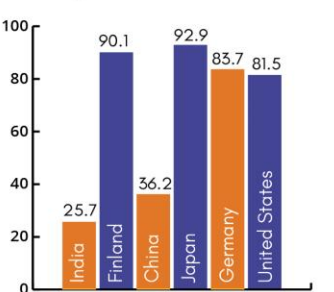
LONG TIME TAKEN TO RESOLVE BANKRUPTCY
in years

FINLAND	0.9
JAPAN	0.6
UNITED STATES	1.5
INDIA	4.3
CHINA	1.7
BRAZIL	4

HIGH COST OF THE PROCESS
% of estate



LENDERS GET LITTLE
Recovery rate, cents to a dollar



THE BIG GAINS

- India will improve its ease of doing business ranking
- Banks and asset reconstruction companies immediate gainers
- Lift lender comfort
 - This will lead to greater investments
 - Corporate bond market will develop
- Locked-up assets will be freed

Why is it a Code?

IBC consolidates various laws, regulations and rules concerning and classifies insolvency, bankruptcy and liquidation of non-financial entities, systematically and comprehensively. Since a 'Code' is a compendium of laws, thus, IBC becomes a code, than just being a law.

Insolvency: Inability of an entity to pay its bills as and when they become due and payable

Bankruptcy: Situation when an entity is declared incapable of paying their due and payable bills

Liquidation: Process of winding up a corporation or an incorporated entity.

WHAT ALL DOES IT OFFER?

ONE LAW TO DEAL WITH BANKRUPTCY



- 2 laws repealed
- 11 amended

TIME-BOUND PROCESS



- 180 days to resolve insolvency
- 270 days in some circumstances

EVERYONE GETS THEIR DUE

ORDER OF PRIORITY

- Cost of insolvency process
- Workers, secured creditors
- Employee wages
- Unsecured creditors
- Government dues
- Any remaining debt



COMPREHENSIVE COVERAGE



- Companies
- Partnerships
- Individuals
- Limited Liability Partnerships
- More can be included

NO DEADLOCK



- Bankruptcy resolved in prescribed time
- If not resolved in time: assets to be sold to pay debtors

REGULATOR TO PROTECT EVERYONE



- The Insolvency and Bankruptcy Board of India to keep watch
- 10 member board to have RBI and government representation

WHAT IS THE SEQUENCE OF STEPS UNDER THE IBC?

On Day 1 of the default, a creditor or a borrower can approach **NCLT/ DBT** to initiate insolvency proceedings. The NCLT/DBT has to accept or reject the plea within 14 days



Once the case is admitted, lenders will constitute committee of creditors (CoC), appoint an **IRP** which will run the borrowers' company in the interim period



Within 180 days, the CoC has to decide on a debt recast plan. Lenders will be given **additional 90 days** to arrive at a final resolution plan



If the lenders agree (by voting), the CoC would go ahead with debt restructuring. **Otherwise**, after 180 days, the company's/ borrower's assets will be **liquidated**

Details of the report card

- Out of 4,738 applications submitted, 2,750 cases were disposed of either because parties had settled these outside the process or because these lacked sufficient grounds for admission.
- Of the remaining 1,988 cases, only 540 cases were **admitted for resolution** at the end of December 2017, and the rest remained pending – of these, only 1.9% were **resolved** by the end of December 2017; 5.9% cases went for liquidation
- Corporate debtors initiated the proceedings in 20% of the admitted cases.

Hits and misses of IBC

- One main objective of the maximum time limit of 270 days for resolution, was to enable banks to pressurize debtors for recovery or resolution – but it was found that out of 540 cases admitted, nearly only one-third were filed by financial creditors (banks and other financing institutions)
- Operational creditors (vendors, supplies, employees etc.) are opting for IBC because:
 - It offers credible warning to the corporate debtors
 - These creditors, mostly small or mid-sized dealing with bigger enterprises, operate on a credit cycle and missed payments hurt them bad
 - Under IBC, creditors with the dues of INR 100,000 can trigger the insolvency process
- In 11 out of 12 cases, referred to the NCLT (as expedited by the RBI), the deadline of 270-days has already passed with on action
- Three mainstays to judge an insolvency process: fairness, collective resolution and equality
 - Since financial creditors have greater say in Resolution Plan, principle of equality suffers
 - The focus is more on **recovery** of dues, **than revival** of the company, thus collective resolution is hit

Given it is yet a new legislation, gradual evolution with amendments will surely decrease the misses and increase the hits of IBC.

Provisions of IBC (Amendment) Ordinance 2018

- **Home buyers** would be treated as financial creditors and shall have the right to be represented in the Committee of Creditors (CoC)
- **'Related party'** now defined in relation to the individual as well, in addition of the company only previously, to bar it from bidding under the resolution process
- **Vote share changes:** CoC to decide on extension of insolvency process beyond 180 days to 270 days and for appointment of IP by 66% vote share (from earlier 75%); other decisions can be taken by 51% vote (it was 75% earlier). The process can be withdrawn altogether by 90% vote share
- **Promoters and guarantors of the MSMEs** are exempted from disqualification from bidding; it further empowers the Centre to allow further exemptions or modifications w.r.t. the MSME sector
- **Moratorium** from parallel proceedings will **not** be available to guarantors of the company
- If a financial creditor or its authorised representative is a related party to the company facing insolvency, it shall not have any participation or voting during a meeting of the CoC
- A company can file an insolvency application, provided it seeks shareholders' approval and at least three-fourth of the stakeholders approve the proposal

Many of changes were made on the basis of the recommendations of the IBC review committee headed by Corporate Affairs Secretary Injeti Srinivas. The Ordinance is likely to be taken up in the monsoon session of the Parliament.

Related news

- Based on the recommendations of the Internal Advisory Committee, the RBI had recommended 12 large accounts for immediate resolution under the IBC, thus providing momentum to the Code. RBI's second list contained 28 NPA accounts
- RBI withdrew its bad-loan resolution schemes such as SDR, S4A in 2018, and adopted harmonised and simplified generic framework for resolution of stressed assets
- Since December 2016, the IBBI has notified rules for corporate insolvency and is yet preparing those for individuals' bankruptcy
- **Via IBC (Amendment) Ordinance, 2017**, issued on November 23, 2017, the government introduced **Section 29A** to stop promoters and defaulters from bidding for companies undergoing resolution and also from submitting resolution plans
- IFC, a member of the World Bank Group, will support the Insolvency and Bankruptcy Board of India (IBBI) in strengthening the implementation IBC 2016

Suggestions mooted

- CVC (Central Vigilance Commission) guidelines should not be applicable to the IBC cases, to help PSB officials take bolder decisions
- In the regime prior to the IBC, many tax and other exemptions were available to make the stressed assets lucrative for the buyers – similar provisions can be provided under the IBC.

3.2. AMALGAMATION OF REGIONAL RURAL BANKS

Why in news?

Union government, in consultation with the NABARD, had decided to go ahead **with phase III of the amalgamation of regional rural banks (RRBs)**, bringing down the number of such entities to 38 from 56 now.

Background

- The first round was in 2005 in which RRBs of the same sponsor bank within a State were consolidated.

Regional Rural Banks (RRB)

- Regional Rural Banks (RRBs) are financial institutions which ensure adequate credit for agriculture and other rural sectors.
- It was set up on the basis of the recommendations of the **Narasimham Working Group (1975)**, and after the legislations of the **Regional Rural Banks Act, 1976**.
- The equity of a regional rural bank is held by the Central Government, concerned State Government and the Sponsor Bank in the proportion of **50:15:35**
- The RRB's have also been brought under the ambit of **priority sector lending** on par with the commercial bank.

- In the second phase of consolidation in 2012, RRBs, which were near each other (even if they belonged to different sponsor banks), were brought together.

Merits

- The consolidation process would enable RRBs to **minimise their overhead costs**, optimise use of technology, enhance capital base and area of operation.
- This will bring about better scale efficiency, higher productivity and robust financial health of RRBs
- Improved **financial inclusion** and **greater credit flow** to rural areas.

Role of Regional Rural Banking for Rural Development:

- Taking the banking services to the doorstep of rural masses, particularly in hitherto unbanked rural areas.
- **Making available institutional credit to the weaker section** of the society who had by far little or no access to cheaper loans and had perforce been depending on the private money lenders.
- **Mobilize rural savings** and channelize them for supporting productive activities in rural areas.
- Provide **finance to co-operative societies**, Primary Credit societies, Agricultural marketing societies.
- **Generating employment opportunities** in rural areas and bringing down the cost of providing credit to rural areas.

Challenges faced by RRBs

- **Difficulties in Deposit Mobilisation:** On account of their restrictive lending policy which excludes richer sections of the village society, these potential depositors show least interest in depositing their money with these banks.
- **Slow Progress in Lending Activity:**
 - It is always difficult to identify the potential small borrowers
 - Most of the small borrowers do not like the bank formalities and prefer to borrow from the informal sources of finance
- **Urban orientation of their staff** which is rarely inclined to serve in rural areas
- **Procedural Rigidities:** The RRBs follow the procedures of the scheduled commercial banks which are highly complicated and time-consuming from the villagers' point of view.
- **Delay in decision making:**
 - The RRBs are controlled by various agencies, i.e., the sponsoring bank, NABARD, RBI, besides Central Government. Thus, it takes long time to take decisions on some important issues.
- The implementation of **Core Banking Services** involves huge cost for setting up of infrastructure

Way forward

- **Governance reform** should start with making public sector institutions more accountable to market discipline.
- **Government stake should be reduced** and state has to ensure the presence of an interested single promoter-like shareholder.
 - Then shareholder could look at mergers, acquisitions and other aspects based on market conditions and merits.
- **Policy and procedure of financing**
 - Simplification & Standardisation of Loan Application
 - Reduction in Processing Time
 - Increased attention towards financing of Non-Farm Activities
- **Recovery of loans**
 - The number of Debt Recovery Tribunals (DRTs) should be increased to fasten the debt recovery
 - RBI should recommend a **compromise and settlements scheme** for the RRBs so that it may make compromise and settlement instead of resorting to the long drawn legal battle.
- **Organisation**
 - Development of Human Resources (Staff Training)
 - **Staff Compensation package** for the staff of RRBs should be brought at par with the other banks.
 - **Faster Branch Expansion**

3.3. GOVERNMENT OWNED NBFCs

Why in news?

Reserve Bank of India (RBI) recently **ended the special dispensations** granted earlier for non-banking financial corporations (NBFCs) owned by the government.

Background

- The Reserve Bank has been given the powers under the RBI Act 1934 to register, lay down policy, issue directions, inspect, regulate, supervise and exercise surveillance over NBFCs.
- The Reserve Bank can regulate and penalize NBFCs for violating the provisions of the RBI Act or the directions or orders issued by RBI under the RBI Act.
- Earlier, only privately owned NBFCs had to maintain a minimum **Capital to Risk Assets Ratio (CRAR)** of 15 percent if Tier-1 capital is 10 percent.

Changes introduced

- Now, the CRAR requirements same as that of private NBFCs have been made applicable to **government NBFCs**.
- Government NBFCs have to achieve this **by 2022**.
- Some of the other changes that government NBFCs would now have to comply with include the **treatment of income recognition**, besides full provisioning for all non-performing assets.
- RBI has **specified a roadmap**, stretching till 2021-22, for these lenders to meet the norms on capital adequacy, provisioning, and corporate governance.
- The recent ruling by the RBI will ensure both types of NBFCs stand on an equal footing on compliance with specific RBI rules and will also help in keeping a check on NPAs and bankruptcy.

- The **Capital Adequacy Ratio (CAR)** also known as **capital-to-risk weighted assets ratio** is a measure of a bank's available capital expressed as a percentage of a bank's risk-weighted credit exposures. It is used to protect depositors and promote the stability and efficiency of financial systems around the world.
- Two types of capital are measured-
 - Tier one capital It absorbs losses without a bank being required to cease trading
 - Tier two capital it absorbs losses in the event of a winding-up and so provides a lesser degree of protection to depositors.

$$\text{CAR} = \frac{\text{Tier One Capital} + \text{Tier Two Capital}}{\text{Risk Weighted Assets}}$$

A Non-Banking Financial Company (NBFC)

- It is a company engaged in the business of loans and advances, acquisition of shares/stocks/bonds/debentures/securities issued by Government or local authority.
- Foreign Investment is allowed up to 100%.

Difference between NBFCs & Banks:

- Provides Banking services to People without holding a Bank license,
- An NBFC cannot accept Demand Deposits,
- An NBFC is not a part of the payment and settlement system and as such,
- An NBFC cannot issue Cheques drawn on itself, and
- Deposit insurance facility of the Deposit Insurance and Credit Guarantee Corporation is not available for NBFC depositors, unlike banks
- An NBFC is not required to maintain Reserve Ratios (CRR, SLR etc.)
- An NBFC cannot indulge Primarily in Agricultural, Industrial Activity, Sale-Purchase, Construction of Immovable Property.

3.4. URBAN COOPERATIVE BANKS TO TRANSITION INTO SMALL FINANCE BANKS

Why in news?

The Reserve Bank of India (RBI) allowed voluntary transition of the Urban Co-Operative Banks (UCB) into Small Finance Banks (SFB).

More on news

- The move is an outcome of the recommendations made by the **High Powered Committee** on Urban Cooperative Banks under R Gandhi in 2015 which included:
 - Converting UCBs with **business size of Rs 20000 Crore** or more into regular banks in a bid to propel their growth.
 - **Licences** for setting up UCBs be **issued only to financially sound and well-managed cooperative credit societies** with at least five years of track record.

- **Putting in place a Board of management** has to be one of the mandatory licensing conditions for licensing new UCBs and expansion of existing ones.
- To operate as a multi-state UCB, the minimum capital requirement would be Rs 100 crore.

Significance of the decision

- **Relaxation of dual control:** UCBs currently face regulation by both the RBI and the respective State governments. By turning into SFBs, they will be regulated only by the RBI.
- **Risk posed to the system:** Some UCBs have acquired the size akin to commercial banks and could pose a risk to the system due to their scale and complexity of business.
 - In case of commercial banks, the present regulatory and legal framework provides reasonable power to RBI for an early resolution which is not the case with UCBs given their weak regulation.
 - In view of this, the time was opportune to reflect on the appropriate size up to which a UCB may be allowed to grow without undue risk to the system.
- **Furthering financial inclusion:** The move will help commercialisation of UCBs and bringing them into mainstream banking furthering the cause of financial inclusion.
 - Due to the limited capacity to raise capital, lack of corporate governance, lack of a level playing field in regulation and supervision at par with commercial banks, all products/lines of businesses undertaken by commercial banks were not permitted to UCBs.

Small Finance Banks

- They provide basic banking services like accepting deposits and lending to the unbanked sections such as small farmers, micro business enterprises, micro and small industries and unorganised sector entities.
- They were created with an aim to encourage financial inclusion by provision of savings vehicles and supply of credit to small business units.
- The minimum paid-up equity capital for small finance banks shall be **Rs. 100 crore**.
- The promoter's **minimum initial contribution to the paid-up equity capital** of such small finance bank shall at least be **40 per cent** (can be brought **down to 26 per cent within 12 years** from the date of commencement of business of the bank).
- They are required to maintain Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR)
- They are required to **extend 75 per cent of its Adjusted Net Bank Credit (ANBC)** to the sectors eligible for classification as priority sector lending (PSL) by the Reserve Bank.

Urban Cooperative Banks (UCBs)

- It refers to primary cooperative banks located in urban and semi-urban areas.
- The Urban Cooperative Banks (UCBs) are registered as cooperative societies under the provisions of, either the State Cooperative Societies Act of the concerned State or the Multi State Cooperative Societies Act, 2002.
- The Reserve Bank regulates and supervises the banking functions of UCBs under the provisions of Banking regulation Act, 1949(AACS).

3.5. SEBI TO INTEGRATE DEPARTMENTS FOR EFFICIENCY

Why in news?

The Securities and Exchange Board of India (SEBI) is planning to integrate its surveillance and investigation departments.

Rationale behind this decision

- SEBI lacks coordination between the two departments. The merged department could take over all investigations, which will **reduce overlapping and increase SEBI's efficiency**.
- Currently, it takes around three months to check if the matter deserves further probe. Merger will **reduce this time frame to 2 weeks**.
- It will **improve coordination and monitoring** in a more efficient manner.

The surveillance department	Investigation department
<ul style="list-style-type: none"> ● It keeps a close tab on market activity to detect any suspicious activity such as market manipulation and insider trading ● It ascertains documents from market intermediaries such as stock exchanges, depositories, and clearing corporation. 	<ul style="list-style-type: none"> ● Probes potentially illegal market activities based on inputs provided by surveillance. ● It also provides referrals to the enforcement department. ● It has an internal committee that sees if the matter is worth taking up. Then they seek independent opinion on the case.

Securities and Exchange Board of India (SEBI)

SEBI was established on April 12, 1992 in accordance with the provisions of the Securities and Exchange Board of India Act, 1992.

Role of SEBI

- To increase the efficiency of the financial system and securities market so that larger saving could be channelled for productive use in the public sector.
- The Preamble of SEBI Act lays down that **protection of the interest of investor** is its basic and foremost aim which is to be achieved through its functions of regulation.
- SEBI as the Capital Market Regulator has twin objectives of **regulating as well as developing the market**.
- It creates discipline in the market and ensure high degree of fairness and market integrity.
- It identifies and prohibits certain types of conduct in the markets and provides the Commission with **disciplinary powers over regulated entities and persons** associated with them.

3.6. DRAFT OF NATIONAL VOLUNTARY GUIDELINES ON SOCIAL, ENVIRONMENTAL AND ECONOMIC RESPONSIBILITIES OF BUSINESS

Why in News?

Recently, Ministry of Corporate Affairs (MCA) released the draft of updated National Voluntary Guidelines on Social, Environmental and Economic Responsibilities of Business (NVGs).

Background

- NVGs were first issued by MCA in July 2011 in order to make business socially responsible, internationally relevant and partner in nation development through their expertise and efficiency.
- Based on these guidelines, SEBI mandates top 500 companies to furnish annual Business Responsibility Report (BRR).
- Several National and International developments in the domains of sustainability and business responsibility, for instance, adoption of Sustainable Development Goals (SDGs), debates on Climate Change and Paris Agreement and enhanced role of Business in engendering Human Rights required updating these NVGs.
- To be used by all businesses, irrespective of their ownership, size, sector, or location. All businesses investing or operating in India, including foreign multi-national corporations (MNCs) will make efforts to follow the Guidelines. Correspondingly, these also provide a useful framework for guiding Indian MNCs in their overseas operations.

About the Draft of updated National Voluntary Guidelines

Comprising of nine interrelated and interconnected principles with their core elements, these represent a holistic approach to business responsibility. The 9 Principles expects business to:

Principles	Core Elements
Integrity, Ethics, Transparency and Accountability	<ul style="list-style-type: none">• Ensure ethical behavior in all the functions and processes of business• Emphasis on disclosures to all stakeholders• Timely payment of all taxes
Safe and Sustainable Goods and Services	<ul style="list-style-type: none">• Continuous improvement in processes and technologies to minimize adverse environmental and social impacts• Provide stakeholders with information about environmental and social issues associated with the product• Empower consumers to practice responsible consumption
Promote well being of employees	<ul style="list-style-type: none">• Compliance with all regulatory requirements; not to use forced or Child labour• Equal opportunities at recruitment and during course of employment; and continuous skill and competency upgradation of employees• Respect right to freedom of association and collective bargaining of workers• Ensure timely payment of fair living wage and support work life balance• Provide hygienic, safe and harassment free workplace

Respect and Responsiveness to all stakeholders	<ul style="list-style-type: none"> • Acknowledge and undertake responsibilities about impacts of policies, decisions and products on stakeholders and natural environment • Enable stakeholders to fairly benefit from the values generated and resolve conflicts in a just, fair and equitable manner
Respect and Promote Human Rights	<ul style="list-style-type: none"> • Business to have understanding of Human rights content of Indian Constitution, national laws and policies and international Bill of Human rights • Promote awareness and realization of human right across value chain • Ensure all individuals have access to effective Grievance Redressal Mechanism
Respect, Protect and Restore the Environment	<ul style="list-style-type: none"> • Business should understand Environmental risks and to address adverse impacts on environment it should have internal policies, procedures and structures • Monitor performance on environmental aspects and address climate change by developing mitigation and adaptation measures and building climate resilience • Adopt innovative technologies and best practices to promote reduction, reuse and recycle of resources
Responsible and Transparent Policy Advocacy	<ul style="list-style-type: none"> • Policy advocacy must expand public goods and ensure fair competition • To the extent possible it should be taken through trade and industry chambers or other collective platforms
Promote Inclusive Growth and Equitable Development	<ul style="list-style-type: none"> • Minimize any adverse impacts on societal, cultural and environmental aspects of society and be sensitive to the concerns of local communities • Minimize negative impacts of displacement and assure appropriate resettlement, compensation and rehabilitation of displaced communities • Respect all forms of Intellectual property and traditional knowledge
Provide Value to Consumer Responsibly	<ul style="list-style-type: none"> • Ensure freedom of choice to consumers and free competition by disclosing all information accurately and objectively promoting and advertising the product without misleading the consumers • Manage consumer data without infringing upon Right to Privacy • Provide for effective Grievance redressal and feedback mechanisms

Key Enablers for Businesses

Factors that would help businesses integrate sustainability principles into their core process include:

- **Leadership Commitment:** Top leadership of business needs to be convinced that success of business depends upon adopting these principles.
- **Employee engagement:** full understanding across the organization about the principles and its comprehensive implementation.
- **Stakeholder engagement:** consistent and continuous mapping of all stakeholders and proactively engaging them to follow these principles.
- **Disclosure and reporting:** proactive public disclosure by businesses of their impacts on society and environment.

Benefits for MSMEs: A separate chapter of guidance has been included for use by MSMEs that suggests following benefits for them if these principles are adopted:

- **Increased access to market and customers:** MSMEs would become preferred suppliers for their customers expecting responsible behavior from their value chains.
- **Better preparedness for compliance:** MSMEs would be better prepared to comply with regulations that India would need to follow over the years post signing major international agreements such as Paris Climate Agreement and Sustainable Development Goals (SDGs).
- **Cost saving and productivity increases:** evidence suggests that investing in environmental friendly measures has higher returns for MSMEs in longer run.
- **Easy access to funds:** Indian Banks Association (IBA) recently came up with National Voluntary Guidelines for Responsible Finance asking banks to factor 'commitment to responsible business' while lending and investing. Adopting the principles would enable MSMEs to negotiate better financial terms with them.

3.7. POWER ASSET REVIVAL THROUGH WAREHOUSING AND REHABILITATION (PARIWARTAN)

Why in news?

The Rural Electrification Corporation (REC) has finalised a plan called Pariwartan to revitalise stressed power sector assets.

More on news

- Power sector is under debt of Rs 11.7 trillion of which Rs 3.5 trillion is already under stress.
- Of these, banks have the largest at 53 per cent of the total loans, followed by non-banking finance companies (NBFCs) at 35 per cent and the balance from the state.
- The power sector NPAs have been rising due to various factors such as:
 - **Paucity of funds** due to lack of interest of promoters and state fiscal capacity
 - **Lack of power purchase agreements** by DISCOMS have led to revenue instability among power generators thereby adding to NPAs.
 - **Fuel shortages** in form of shortage of coal and reduced nuclear power generation have added to the problem.
 - **Lack of Demand** due to solar and wind alternatives in addition to slower industrial growth has led to NPA woes.
 - **Transmission and Distribution (T&D) losses** also referred to as Aggregate Technical & Commercial (AT&C) losses are above 20% (2015-16).
- Under Insolvency and Bankruptcy code, stressed assets have drawn bids of Rs 1-2 crore which are much less than Rs 5 crore which is the minimum requirement to build them. As promoters lost interest, the value of these assets is deteriorating due to lack of operations and maintenance.

Rural Electrification Corporation

- It is a Navratna company under the administrative control of the Ministry of Power,
- It is the nodal agency by the Government of India for implementation of Saubhagya (Pradhanmantri Sahaj Bijli Har Ghar Yojana) and DDUGJY (Deendayal Upadhyaya Gram Jyoti Yojana).
- It is the coordinating agency for rolling out UDAY (Ujwal Discom Assurance Yojana).

Pariwahan Scheme

- Under the scheme government has planned to warehouse stressed power projects totalling 25,000 megawatts (MW) **under an asset management and rehabilitation company (AMRC) jointly owned by the financial institutions** (Power finance corporation and lending banks) to protect the value of the assets and prevent their distress sale under the insolvency and bankruptcy code till demand for power picks up.
- These projects will be transferred to the AMRC at net book value, wherein it will own a 51 percent stake in the projects while the remaining 49 percent will be held by the lenders
- REC has identified projects with total debt of around 1.8 trillion rupees to be part of the scheme.
- The scheme is inspired by the Troubled Asset Relief Program, which was introduced in the US during the 2008 financial crisis.
- The scheme is similar to **SAMADHAN (Scheme of Asset Management and Debt Change Structure)** under which the SBI led bankers' consortium took over unsustainable debt of stressed power plants to avoid their liquidation.

3.8. STATUS OF POWER SYSTEM TRANSFORMATION 2018

Why in news?

The International Energy Agency (IEA) published **Status of power transformation 2018 report**

Context

- The report presents the findings of the Advanced Power Plant Flexibility (APPF) Campaign, which was supported by two **Clean Energy Ministerial** initiatives: the 21st Century Power Partnership (21CPP) and the Multilateral Wind and Solar Working Group.

Clean Energy Ministerial (CEM)

- It is a high-level global forum to promote policies and programs that advance clean energy technology, to share lessons learned and best practices, and to encourage the transition to a **global clean energy economy**.

21st Century Power Partnership (21CPP)

- It is a multilateral effort of the Clean Energy Ministerial and serves as a platform for public-private collaboration to advance integrated policy, regulatory, financial, and technical solutions for the large-scale deployment of renewable energy in combination with deep energy efficiency and smart grid solutions.

What is Power System Flexibility?

- It is defined as the ability of a power system to reliably and cost **effectively manage the variability and uncertainty of demand and supply** across all relevant timescales.
- It includes **ensuring instantaneous stability** of the power system and supporting **long-term security of supply**.
- A lack of system flexibility can reduce the resilience of power systems, or lead to the loss of substantial amounts of clean electricity through curtailment of VRE.

Power system flexibility can be conceptualised as having three “layers”:

- **The hardware and infrastructure**, available to provide physical flexibility.
- **The policy, regulatory and market frameworks** which incentivise the provision of flexibility.
- **The institutional roles and responsibilities of entities** who provide, incentivise, or manage flexibility.

Significance

- It is important topic while considering the increasing intensity and frequency of high-impact events, and a higher share of **variable renewable energy (VRE)**.
- It is one aspect of **power system transformation (PST)**, which also includes incorporation of VRE generation, growth in distributed energy resources, and the application of demand response and other modern technologies.
- PST is crucial for **ensuring electricity security** by providing uninterrupted availability of energy sources at an affordable price.

Present scenario of Power system flexibility:

- **Power plants** are one option to provide system flexibility.
- Flexible power plant operation can take many forms, like
 - Rapidly changing plant output
 - Starting and stopping more quickly
 - Turning plant output down to lower levels without triggering a shutdown.
- Other technology sources of flexibility are strong and **smart grids, demand response and storage**.
- **Generators that were initially** designed and operated as “inflexible” have been successfully engineered into highly flexible assets, often without major capital investment.
- **Smart contract structures for new or enhanced system** assets allow for positive net benefits over time.
- **Designing contracts with sufficient flexibility** leaves headroom for lower-cost energy sources such as VRE and energy efficiency.

Way forward

- **Incorporating regular flexibility assessments** into planning and strategy dialogues is the key.
- **Established decision support tools** can be used to assess flexibility requirements, understand the value of proposed changes, and plan for the future.
- Policy makers can help facilitate a **transparent and collaborative planning environment** that employs global best practices.
- **Well-designed policy, market and regulatory frameworks** are critical to unlock power plant flexibility
- **Mobilising technically available flexibility** in practice may call for changes to operational practices, fuel and power purchase contracts, regulatory incentives and market design.
- Often, no technical changes or capital investments are required to access this plant flexibility. Instead, modifications to system operational procedures or market and regulatory incentives can unlock power plant flexibility.

3.9. THREE YEAR ACTION PLAN: AGRICULTURAL EDUCATION

Recently, the cabinet has approved the continuation of the Three-Year Action Plan (2017-2020) of the scheme for Agricultural Education Division and ICAR Institutes.

About the Scheme

- The scheme aims to reduce academic inbreeding and addressing faculty shortage, promotes green initiatives, international ranking, alumni involvement, promoting innovations, technology enabled learning, post-doctoral fellowships, agriculture education portal, and scientific social responsibility.
- Moreover, it will facilitate research on gender issues in agriculture and allied fields, through policy and programme.

Need of Agricultural Education

- **Agricultural Productivity-** Effective agricultural education (both for farmers as well as researchers) leads to better economic and technical decision making in agricultural processes, which is further reflected in increase in agricultural productivity.
- **Value Chain of Agriculture-** The entire value chain of agriculture i.e. from farm input to market linkages, suffers from various bottlenecks which can well be addressed by agricultural education.
- **Employment-** Agricultural education is needed in order to absorb the emerging labour force, especially with the emerging arenas of biotechnology, GM food, precision agriculture etc. which require detailed knowledge.
- **Labour value-** Market value of individual in agricultural field in India is lower than many developing countries and agricultural education adds to an individual's productivity and therefore increases the market value of his labour.

Challenges face by Agricultural Education

- **Finance-** Agriculture is a state subject and the statutory responsibility for it vests with the state governments which lack in funds. Moreover, the **establishment cost** of agricultural universities has risen substantially while the operational budget has reduced which constrains institution for innovation.
- **Faculty-** State Agricultural Universities (SAUs) are facing **non-replacement of retired faculty** and high inbreeding of faculty (nearly 51% of faculty members have their degrees from the same university in which they are teaching), which hampers the quality of academic and research programmes.
- **Lack Networking and quality-** It has been noticed that most of the universities are lacking in association and integration with different national and international universities for academic activities.
- **Low quality-** The quality provided in these universities is low which further affects their global ranking.
- **Not a first option-** Negative attitude towards agricultural education due to low returns and limited career opportunities makes agricultural education not a preferred choice amongst students.

Way Forward

- **Public Private Partnership (PPP)-** Government should harness the PPP modal with agricultural universities especially in agribusiness, biotechnology, nanotechnology and many frontier areas, where public sector institutions are weak and not responding to the changing demand.
- **Revisit Curriculum-** **Ashok Dalwai Commitee on Doubling the farmer Income**, highlighted that there is a need to revisit the current agriculture education curriculum to orient it to promote agriculture as a sustainable practise and profit generating enterprise.
- **Global Standard practices-** Agricultural education is needed to be harmonized with existing and emerging issues related to WTO, ethics of IPR, standard trade practices.

Indian Council of Agricultural Research (ICAR)

- It is the apex body for **co-ordinating, guiding and managing** research and education in agriculture including horticulture, fisheries and animal sciences in the entire country.
- Formerly known as Imperial Council of Agricultural Research **established on 16 July 1929**.
- **Presently**, it is an **autonomous organisation** under the Department of Agricultural Research and Education (DARE), Ministry of Agriculture and Farmers Welfare.
- With 101 ICAR institutes and 71 agricultural universities spread across the country this is one of the largest national agricultural systems in the world.
- The **Agricultural Education Division**, ICAR is involved in strengthening and streamlining of higher agricultural education system to enhance the quality of human resources in agri-supply chain to meet future challenges in agriculture sector in the country.

- **Regional Specific Education-** The criteria for new universities should be **agro-ecoregion** rather than one discipline, as agriculture-related issues are multidisciplinary.
- **Regulatory authority** i.e. ICAR does not have statutory powers or the mandate to regulate agricultural education. Thus, it is important to create a **central statutory authority** for the regulation of higher agricultural education to make the agriculture sector science and technology (S&T) based.
- **Vocational Agricultural Education-** Universities are concentrating mainly on formal education while there is also need for Vocational and non-formal education especially in respect of knowledge and technological empowerment for work force in rural areas.

3.10. KRISHI KALYAN ABHIYAN

Why in news?

Recently Krishi Kalyan Abhiyan was launched by Ministry of Agriculture and Farmer Welfare.

More about the Abhiyan

- It was launched with an aim to **aid, assist and advice farmers** to improve their **farming techniques** and **raise their income**.
- It has been launched from **1st June 2018 till 31st July 2018** during which various activities to **promote best practices** and **enhance agriculture income** will be undertaken in accordance with an action plan formulated by including various departments of the Ministry such as Department of Agriculture, Cooperation & Farmers Welfare (DAC&FW), Animal Husbandry Dairying & Fisheries (DAHD&F) etc.
- Various activities under the program are –
 - Distribution of soil health cards to all farmers
 - 100% coverage of bovine vaccination for Foot and Mouth Disease (FMD) in each village
 - 100% coverage of Sheep and Goat for eradication of Peste des Petits ruminants (PPR)
 - **Artificial insemination** saturation
 - Demonstration programmes on **Micro- irrigation and integrated cropping practice** etc.
- It will be undertaken in 25 villages with more than 1000 population each in **Aspirational District** as identified in consultation with the Ministry of Rural Development in accordance with the guidelines of NITI Aayog.
- If the number of villages in a district is less than 25 with more than 1000 population then all the villages will be covered.
- The overall coordination and implementation will be done by **Krishi Vigyan Kendra**.

3.11. FIRST FREIGHT VILLAGE

Why in news?

India's first freight village is being developed in Varanasi.

More on News

- The **objective of the project** is to support economic development in the hinterland of the **multimodal terminal** at Varanasi and reduce logistics cost in the Eastern Transport Corridor and its influence zone.
- The village is being **funded by the World Bank** and it is being implemented by the inland waterways authority of India.
- The village will also have the Varanasi waterways terminal which is being developed under the **Jal Marg Vikas project**.
- Varanasi being a strategic location provides the opportunity to **facilitate the transshipment** of about 30 million tonnes of domestic freight as well as another 9 million tonnes of export import freight.
- Apart from supporting logistics and warehousing segment of the supply chain it would also bring in retailers, warehouse operators and logistics service providers supplying the regional FMCG market, together.

What is Freight Village?

"A freight village is a defined area within which all activities relating to transport, logistics and the distribution of goods, both for national and international transit, are carried out by various operators"

Jal Marg Vikas Project

- The project envisages the development of **waterway** (for commercial navigation) **between Allahabad and Haldia** on Ganga River that will cover a distance of 1620 km.
- The project covers Uttar Pradesh, Bihar, Jharkhand and West Bengal.

4. SECURITY

4.1. HAWALA TRANSACTIONS

Why in news?

Investigating agencies have unearthed huge transactions as part of a probe into an international “hawala” syndicate.

What is Hawala system?

- The word "**Hawala**" means **trust**. It is an **alternative or parallel remittance system**, which works outside the circle of banks and formal financial systems. It is also sometimes referred to as "**Underground Banking**".
- In a hawala transaction, **no physical movement of cash is there**.
- This network is being used extensively across the globe to **circulate black money** and to provide funds for terrorism, drug trafficking and other illegal activities.

Enforcement Directorate (ED)

- It is a law enforcement agency and economic intelligence agency responsible for enforcing economic laws and fighting economic crime in India.
- It is part of the Department of Revenue, Ministry of Finance, Government of India.
- The ‘Enforcement Unit’ of Department of Economic Affairs was renamed as ED in 1957.

Status of Hawala in India

- Hawala has been **made illegal in India**, as it is seen to be a form of money laundering and can be used to move wealth anonymously. The hawala transactions are uncounted since they are not routed through banks.
- In India, FEMA (Foreign Exchange Management Act) 2000 and PMLA (Prevention of Money Laundering Act) 2002 are the two major legislations which make such transactions illegal and are enforced by **Enforcement Directorate**.

4.2. MORE FINANCIAL POWERS TO DRDO

Why in news?

The government has recently delegated greater financial powers to Defence Research and Development Organization (DRDO).

Need for delegation

- India is currently faced with a strategically-vulnerable position of being **the world’s largest arms importer** due to the abysmal performance of DRDO. It **lacks effectiveness and efficiency** due to time and cost over runs.
- Further a major hinderance in its effectiveness is its **lax attitude** along with the **lack of major innovative technological** solutions for the country.
- Its budget continues to hover around 5-6% of the overall defence budget while China spends around 20% of its defence outlay on R&D.

About DRDO

- It was **formed in 1958 by the merger** of the Technical Development Establishment and the Directorate of Technical Development and Production with the Defence Science Organisation.
- It is under the administrative control of the **Ministry of Defence**.
- Charged with military R&D, it works for **enhancing self-reliance** in Defence Systems and **production of world class weapon** systems and equipment in accordance with the expressed needs and the qualitative requirements laid down by the three services

Recent reforms

- Central government has **delegated greater financial powers** to DRDO to neutralise the ill-effects of over centralisation.
- **Bifurcation of the post** of scientific advisor to defence minister cum chief of DRDO to enhance functional efficiency.
- The **powers of the DRDO chief** (secretary, defence R&D) to sanction projects and procurements have now been enhanced from Rs 75 crore to Rs 150 crore.
- The **powers of the seven directors-general** or DRDO cluster heads have gone up from Rs 50 crore to 75 crore.

Way forward

- As suggested by **Rama Rao Committee** (constituted to conduct a comprehensive review of DRDO), in 2008 **DRDO should focus only on "critical technologies" of "strategic importance"** and other tasks should be delegated to other agencies for better functioning.
- **Vacancies in DRDO** should be filled within stipulated time to enhance functional performance.
- Focus of DRDO should be on **innovative R&D** rather than on implementation of other less important tasks such as production of pellet guns.

4.3. DEFENCE MINISTRY ISSUES NEW GUIDELINES FOR START-UPS

Why in news?

Ministry of Defence has specified **new rules for Indian start-ups** to enable them to take part in military projects.

Significance

- It encourages new companies to undertake research projects to develop or upgrade weapon systems and to work towards **reducing imports**.
- It leverages **cutting-edge research and innovation** of start-ups.

New guidelines

- Under the new rules, start-ups in some certain categories recognised by the Department of Industrial Policy & Promotion (DIPP) will **automatically qualify** to take part in specified defence projects.
- For projects with estimated cost of prototype development phase not exceeding INR 3 Crore, no separate technical or financial criteria will be defined for both 'startups' and 'other than startups', to encourage their participation
- For relatively smaller R&D projects, the government has simplified rules by removing several regulations required for participation.
- These new rules apply to the **'Make II' category of defence procurement**.
- With these rules specified, The Army, Air Force and Navy will now shortlist projects that can be awarded under the category.

'Make' category in Defence Procurement Procedure

- It is a vital pillar for realising the vision behind the 'Make in India' initiative, by fostering indigenous capabilities by both public and private sector.
- As per **DPP-2016**, there are two sub-categories of **'Make' Procedure**:
- **Make-I (Government Funded)**: It will involve **Government funding of 90%**, released in a phased manner.
 - **Make-II (Industry Funded)**: Under this, private industry funds the research for the product on its own and develops a prototype. There will be **no government funding** for developing the prototype but there is an assurance of orders on successful development and trials of the prototype.

BOOST TO NEW COS

DIPP - Recognised

Startups will qualify for defence projects.



Categories range



from Aeronautics, Nanotechnology and Virtual Reality to Renewable Technology, Robotics, Green Technology and Internet of Things

Armed Services have identified 53 projects under this 'Make II' category



3 Startup Moves This Year



March: Draft production policy promised that the government will set up a Rs. 1000 crore fund for startups that would be selected through 'hackathons'



May: Draft offsets policy described moves to set up a SEBI regulated fund that will promote startups and will permit foreign manufactures to meet obligations that run in billions of dollars



JUNE: New rules for homegrown startups in an attempt to make them focus on cutting edge research and development

4.4. NSG COMMANDOS TO BE DRAFTED IN J&K

Why in news?

The centre has decided to deploy National Security Guard (NSG) commandos in J&K to fortify counter terror operations.

More on News

- Till now NSG has been involved in handling counter terror operations

About NSG

- It is an Indian special forces unit under the **Ministry of Home Affairs** (MHA).
- It was **established in 1984**, following Operation Blue Star and the assassination of Indira Gandhi for combating terrorist activities.
- It is **not categorised under Central Armed Police Force** (CAPF) but has a special forces mandate.
- The NSG personnel are commonly referred to as **Black Cats** because of the black outfit and black cat insignia worn on their uniform.

and only the ones which have been of high intensity such as Mumbai terror attacks or pathankot terror attack. The recent move of involving NSG in J&K will include:

- NSG will **train J&K police and other paramilitary forces** in room intervention, anti-terror skills, oversee anti-hijack operations at Srinagar airport and deploy its commandoes in intelligence operations.
- **Use specialised sniper guns**, Koch mp5 machine guns, through the wall radars etc. to handle militant attacks.

4.5. EXERCISE MALABAR 2018

Why in news?

Trilateral Naval Exercise Malabar 2018 was held off the coast of Guam in Philippine Sea.

About the exercise

- It is a trilateral exercise between **India, Japan and USA**.
- It was started as Indo-US bilateral naval war drill in 1992. Since then it is held annually. Malabar 2018 was the **22nd edition** of the naval exercise.
- Japan joined the exercise as permanent participant in 2015, making it trilateral exercise.
- The **primary aim** of this multilateral exercise is to **increase interoperability** amongst navies of three countries and develop common understanding of procedures for Maritime Security Operations and deepen defence relations between them.
- Indian Navy participation in this year's exercises included indigenous stealth frigate INS Sahyadri, fleet tanker INS Shakti, anti-submarine corvette INS Kamorta and P-8I long-range maritime patrol aircraft.

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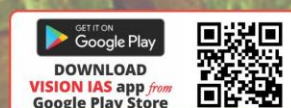
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5. ENVIRONMENT

5.1. COMPOSITE WATER MANAGEMENT INDEX

Why in News?

Recently, NITI Aayog released Composite Water Management Index (CWMI) to assess and improve the performance in efficient management of water resources.

Background

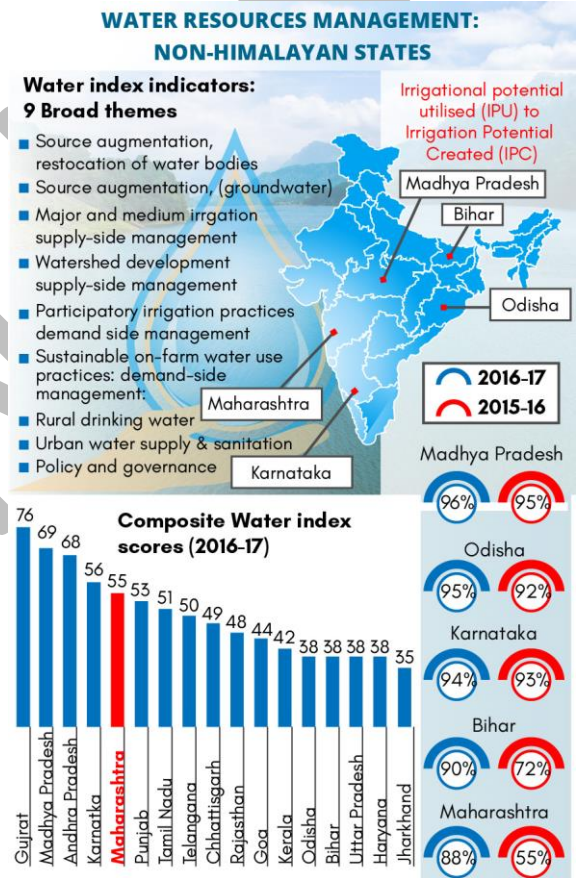
- **Inter-Governmental Panel on Climate Change (IPCC)** in 2014 warned that approximately 80% of the world's population suffers a severe threat to its water security.
- **World Bank** indicates that by 2030 India's per capita water availability may shrink to half, which will push the country into 'water scarce' category from the existing 'water stress' category.
- India is home 16% of World's population however, it holds only about 4% of global freshwater.
- **Water is a State subject** and its optimal utilization and management lies predominantly within the domain of the States.
- With nearly **70% of water being contaminated**, India is placed at 120th amongst 122 countries in the water quality index.

Finding of the report

- **About Index:** Index evaluates states on nine broad sectors and 28 indicators (see infographic)
 - 14 of the 24 states analysed scored below 50% on water management and have been classified as "low performers".
 - 21 Indian cities including Delhi, Bengaluru, Chennai and Hyderabad will run out of groundwater by 2020, affecting 100 million people.
- India is undergoing the **worst water crisis** in its history
 - 600 million people in India face high to extreme water stress in the country.
 - 75% of the households in the country do not have drinking water at their premise.
 - 84% rural households do not have piped water access.
 - About 200,000 people dying every year due to inadequate access to safe water.
 - 40% of India's population will have no access to drinking water by 2030.
 - India would face a 6% loss in its gross domestic product (GDP) by 2030.
- **Decreasing annual per capita availability of water:** It fell from 1,820 cubic meters in 2001 to 1,545 cubic meters in 2011, which may further fall to 1,341 cubic meters in 2025.
- **Food security risk:** Underperformance of states like Uttar Pradesh, Bihar, Rajasthan and Haryana poses significant water and food security risks for the country as they account for 20-30% of India's agriculture output and are home to over 600 million people.

Water Stressed Condition: When annual per-capita water availability is less than 1700 cubic meters.

Water Scarcity Condition: When annual per- capita water availability is less than 1000 cubic meters.



Significance of CWMI

- It will ensure that the principle of competitive and cooperative federalism is actualised in India's water management system
- It will help build pressure on states who have not performed well to improve their water management techniques as this is directly linked to agriculture prosperity in different states
- Data from Index can be used by researchers, entrepreneurs, and policymakers to enable broader ecosystem innovation for water in India.

- **Priority in National Agenda:** Worsening water crisis in Cape Town has highlighted the risks and challenges that lie ahead for many Indian cities.
 - These crises have **increased the momentum** around effective water management, as between 2015-16 and 2016-17, about 60% (15 out of 24) of the states included in the Index have improved their scores.
 - Many **water-scarce states have performed better** in the Index like Gujarat, Madhya Pradesh, Andhra Pradesh, Karnataka, Maharashtra and Telangana.

Issues

- **Increasing Frequency of Drought:** About 800 million of India's 1.3 billion people depends on agriculture for a living, with 53% of agriculture is rainfed, creating socio-economic distress for farmers.
- **Lack of Coordination among States:** Interstate water disagreements are increasing, reflecting poor national water governance.
- **Lack of water data:** Data systems related to water in the country are limited in their coverage, robustness, and efficiency:
 - **Limited coverage:** Detailed data is not available for several critical sectors such as for domestic and industrial use.
 - **Unreliable data:** Available data can often be of inferior quality, inconsistent, and unreliable due to the use of outdated methodologies in data collection.
 - **Limited coordination and sharing:** Data in the water sectors exists in silos, thereby reducing efficiencies.
- **Climate change:** Hot summers and shortened winters are resulting in retreating Himalayan glaciers, erratic monsoons, frequent floods etc, which are further worsening the situation throughout
- **Decline in precipitation:** On an average rainfall declined, from 1,050 mm in the kharif season of 1970 to less than 1,000 mm in kharif 2015.
- **Water pollution:** Almost 70% of the water resources are identified as polluted with organic and hazardous pollutants.
- **Groundwater contamination:** Lack of proper wastewater treatment from domestic and industrial sources has led to progressive contamination of groundwater posing health risks
- **Poor farming practices:** Indian agriculture accounts for about 90% of the country's annual domestic water consumption. However, unscientific practice alongwith freebies given by government have led to unsustainable and exploitative usage of water resources. Ex: Groundwater in India depleted at 10-25 mm per year between 2002 and 2016.

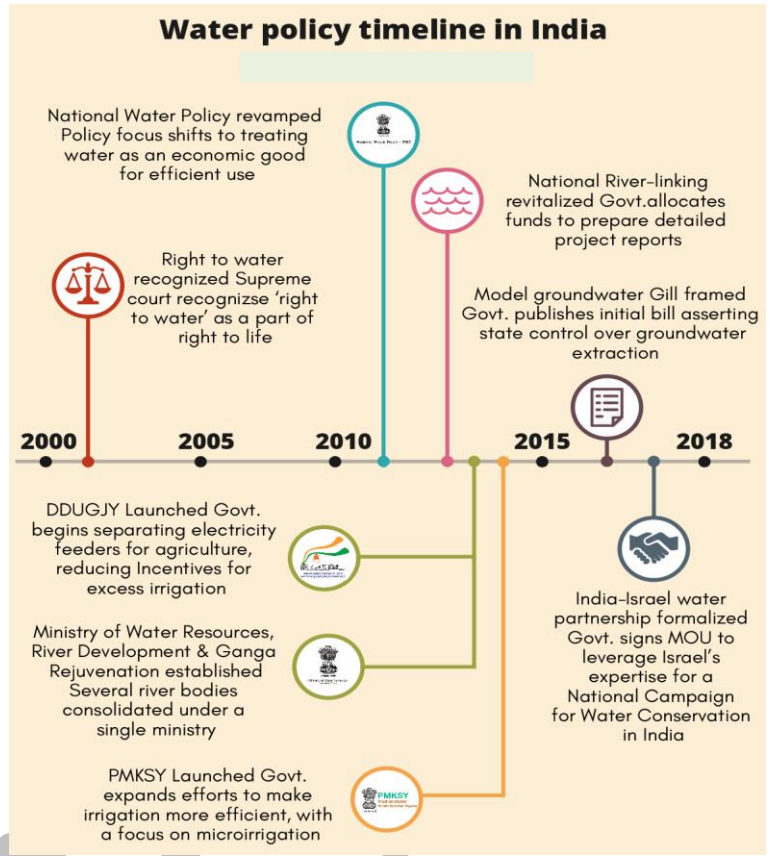
Successful Case Study

- **Community Managed Water Supply Programme (Gujarat):** It aims to supply the village community with adequate, regular and safe water through household-level tap water connectivity, including households of people from backward communities.
- **Madhya Pradesh's 'Bhagirath Krishak Abhiyan':** It has resulted in the construction of thousands of farm ponds to boost irrigation potential, through the efforts of local farmers, government officers, and financial institutions such as NABARD.
- **Data for groundwater management: Andhra Pradesh's online water dashboard:** Under it, state has mapped 100% of its critical and over-exploited units and constructed recharge infrastructure across 96% of these, in addition to having created a regulatory framework for managing groundwater.

Way Forward

- **Fostering Cooperative and competitive Federalism:** by formulating frameworks for national water governance, to improve Inter and Intra state cooperation across the broader water ecosystem.
- **Creating National Irrigation Management Fund (NIMF):** To provide financial incentives to states to improve performance in irrigation management
- **Augmenting sources of clean drinking water supply and treatment technologies** through watershed management, rainwater harvesting etc. to sustain increasing urbanisation and economic growth in cities.
- **Adopting hydrological-basin approach:** For holistic river basin management (river basins cut across several state boundaries) instead of Administrative boundary approach.
- **Amendment in CWMI methodology:** To emerge as reliable planning tool, Index should also include water productivity, water-use efficiency, crop water demand, drinking water supply rates, quality of supply, health indicators and environmental impacts other than 9 indicators.

- **Mobilize community participation:** States should tap into the local knowledge base of problems and challenges surrounding water supply systems, while ensuring true representation through partnerships with NGOs and other relevant organizations.
- **Provide adequate capacity building and technical support:** Community efforts should be supplemented by support in the form of adequate financing, technical know-how, financial management skills, etc.
- **Enable data-backed decision making:** States need to create robust water data systems with real-time monitoring capabilities to ensure that the data can be used to target policy interventions and enable innovation in the broader water ecosystem.
- **Leverage private sector expertise:** Private sector expertise, especially in the realms of technology and data, needs to be leveraged by governments to ensure the quick creation and efficient management of data and monitoring systems.



5.2. PLASTIC BAN

Why in News?

Recently, India committed to eliminate all single-use plastic in the country by 2022.

Background

- India was the global host of **2018 World Environment Day (June 5, 2018)** with “**Beat Plastic Pollution**” as the theme, reflecting world commitment to combat single-use plastic pollution.
- According to **United Nations Environment Programme (UNEP)** if current pollution rates continue, there will be more plastic in the sea than fish by 2050, as globally, only 14% of plastics is recycled.
- Only 24 States and Union Territories have complied with the **Centre’s Plastic Waste Management (PWM) Rules, 2016**, to regulate manufacture, sale, distribution and

- **90%** of this plastic not being recycled
- **500-1000** years it takes for plastic to degrade
- **690** tonnes is Delhi’s daily share alone
- **15,342** tonnes of waste generated in India per day (5.6 million tonnes per annum)

Single-use plastics: Also referred as disposable plastics, are commonly used for plastic packaging and include items intended to be used only once before they are thrown away or recycled.

Plastic Waste (Management and Handling) Rules, 2016.

- **It defines the minimum thickness of plastic carry bags** i.e. 50 microns. This would increase the cost and the tendency to provide free carry bags would come down.
- **Responsibility of local bodies:** Rural areas are brought under the rules since plastic has reached rural areas as well. The gram sabhas have been given responsibility of implementation.
- **Extended Producer Responsibility:** Producers and brand owners have been made responsible for collecting waste generated from their products.
- Producers are to keep a record of their vendors to whom they have supplied raw materials for manufacturing. This is to curb manufacturing of these products in unorganised sector.
- **Responsibility of waste generator:** All institutional generators of plastic waste shall segregate and store their waste as per Solid Waste Management Rules, and handover segregated wastes to authorized waste disposal facilities.
- **Responsibility of street vendors and retailers:** Not to provide such carry bags or fine would be imposed. Only the registered shopkeepers on payment of a registration fee to local bodies would be allowed to give out plastic carry bags on charge.
- To promote the use of plastic for road construction or energy recovery.

use of plastic carry bags including those of compostable plastic, and plastic sheets for packaging or wrapping applications.

- **Single Use Plastic:** It account for 50% of the plastic we use, with none states in India have plans in place to tackle single use plastics.

Impact of plastic Pollution

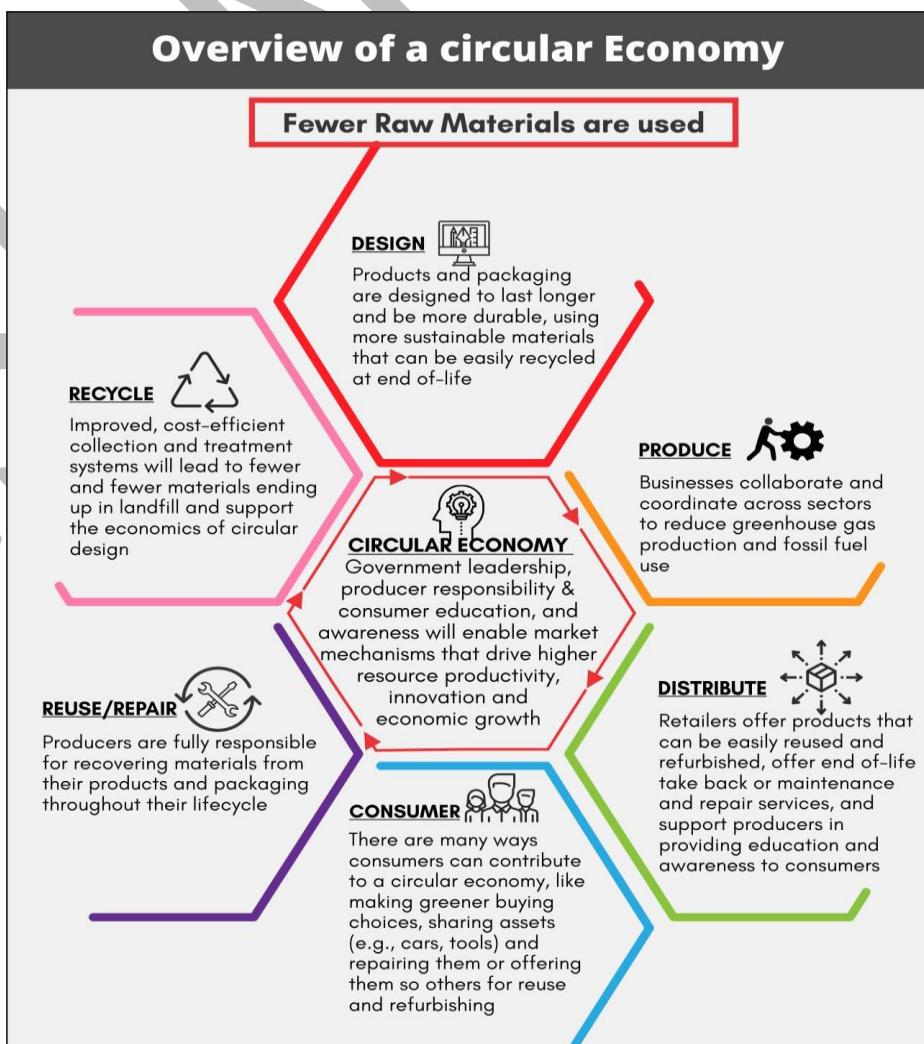
- **Environmental Pollution:** According to a 2014 toxics link study on plastic waste, it contributed directly to ground, air and water pollution.
 - **Soil Pollution:** Toxic chemicals leach out of plastic through landfill site, is linked to decreasing crop productivity, impacting food security, birth defects, impaired immunity, endocrine disruption and other ailments
 - **Poisoning Ocean:** Every year, up to 13 million tons of plastic leak into our oceans, where it smothers coral reefs and threatens vulnerable marine wildlife. The plastic that ends up in the oceans can circle the Earth four times in a single year, and it can persist for up to 1,000 years before it fully disintegrates
 - **Air Pollution:** Disposing of plastic waste by burning it in open-air pits releases harmful gases like furan and dioxin.
- **Social Cost:** The social damage continuously being inflicted is inestimable as every sphere of life get affected by it like tourism, recreation, business, the health of humans, animals, fish and birds.
- **Health Impact:** Plastic bags often provide **breeding grounds** for mosquitoes and pests thus increase the transmission of vector-borne diseases like malaria.
- **Bioaccumulation:** Plastic bags are often ingested by animals who mistakenly taken them for food due to which toxic chemicals **entered the human food chain.**
- **Financial Loss:** The total economic damage to the world's marine ecosystem caused by plastic amounts to at least \$13 billion every year.

Maharashtra Plastic Ban

- Recently, Maharashtra Government enforced plastic ban in State.

Issues with such plastic ban

- **Loss of jobs and revenue:** According to an study, state-wide ban in Maharashtra will result in loss of up to Rs 15,000 crore and nearly 3 lakh job.
- **Implementation Issues:** Uttar Pradesh Government has reintroduced plastic ban in state from July 15, 2018, third time since 2015, reflecting poor implementation of previous ban due to:
 - Confusion among manufacturer, business entity and consumer over what's banned and what's not.
 - Poor awareness among various stakeholder about the ban
 - Hasty decision taken, leading to poor planning and enforcement
 - cases of smuggling and the rise of black markets for plastic bags leading to widespread availability of and demand for polythene bags.
- **Taj Decrelation** - It aims at **gradual phasing out of single-use plastic** water bottles and cutlery in the 500-metre radius of the **Taj Mahal** in the next five years and to make the monument litter-free.



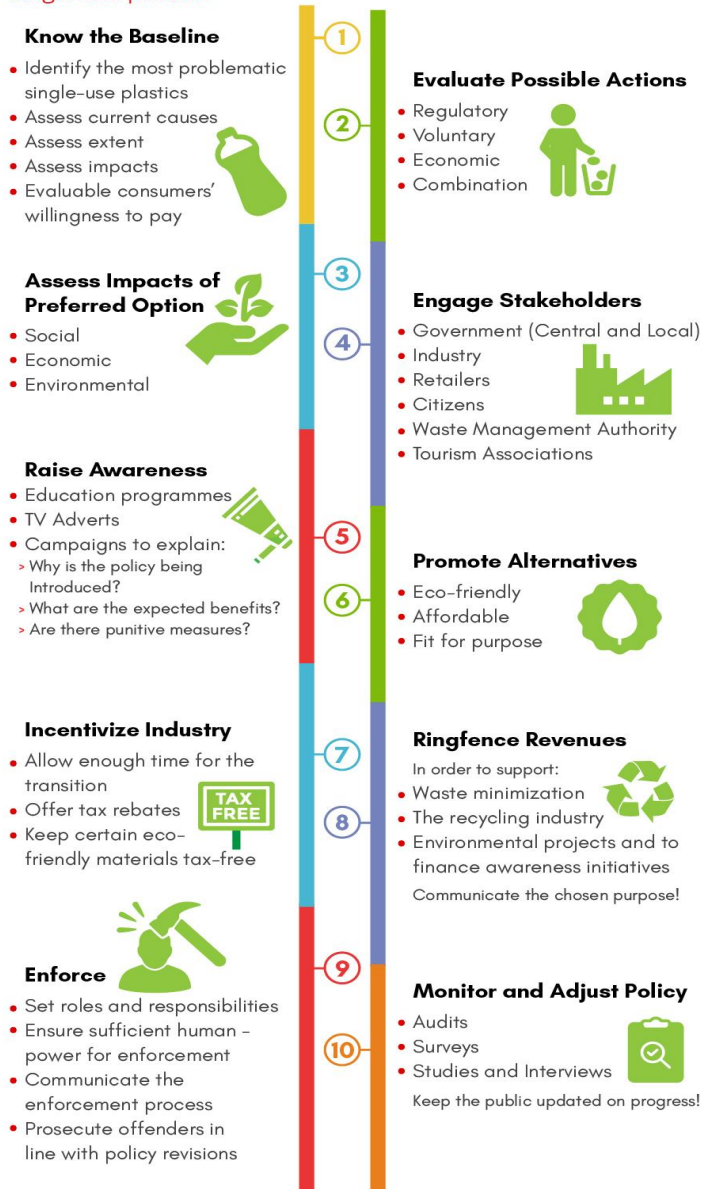
- **Exuberating Natural Disaster:** Encroachment and clogging of city drainage with plastic and solid waste often leads to suburban flooding eg Mumbai experience annual flooding like situation during monsoon season due to water clogging etc

Way Forward

- **Enacting strong policies** that push for a more **circular model of design and production** of plastics, for achieving India's commitment to eliminate all single-use plastic in the country by 2022.(see infographic)
- **Encouraging Public-private partnerships and voluntary agreements** as an alternatives to bans as it would allow **citizens time to change their consumption patterns** and provide an opportunity for affordable and eco-friendly alternatives
- **Exploring Alternative** like biodegradable materials such as reused cotton or paper, jute bags, casein (main protein in milk) which can be used to make a biodegradable material for use in insulation, packaging and other products. According to Bloomberg, it is 500 times better than conventional plastics at protecting food from oxygen.
- **Promoting bioplastics** as they can be easily decomposed and have higher biodegradability.
- **Promoting Green Social Responsibility** concept to sensitise citizen and encourage them to be more sustainable in their approach through **behavioural change** by shifting to a production and consumption system that is smart, innovative and sustainable based on efficiencies across the entire life cycle of the product.

ROADMAP FOR POLICYMAKERS

10 steps to consider when introducing bans or levies on single-use plastics



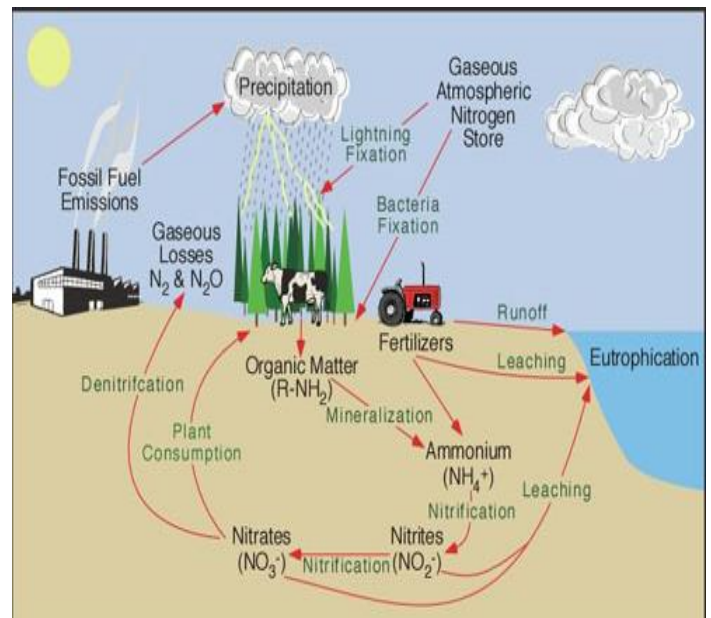
5.3. NITROGEN EMISSION

Why in News?

Recently, Indian Nitrogen Assessment report highlighted the nitrogen emission scenario in Indian Environment.

Highlights of the report

- In India nitrogen emissions grew at 69% from 2001 to 2011 and has **replaced methane** as the second largest Greenhouse Gas (GHG) from Indian agriculture.
- Agricultural soils contributed to over 70% of nitrous oxide (N₂O) emissions, followed by waste



water (12%) and residential and commercial activities (6%).

- As fertilizer, nitrogen is one of the main inputs for agriculture, but inefficiencies along the food chain mean about 80% of nitrogen is wasted.
- Annual nitrogen emissions from coal, diesel and other fuel combustion sources are growing at 6.5% a year currently while emission from poultry industry is growing at the rate of 6%.

Effects of nitrogen pollution

Through the phenomena of **Nitrogen cycle**, it is transferred from soil and water to the atmosphere through **denitrification**. **Denitrification** completes the nitrogen cycle by converting nitrate (NO_3^-) back to gaseous nitrogen (N_2). Denitrifying bacteria are the agents of this process. These bacteria use nitrate instead of oxygen when obtaining energy, releasing nitrogen gas to the atmosphere. Excess of Nitrogen in the atmosphere has various impacts-

- **On Economy-** India loses nitrogen worth US \$10 billion per year as fertiliser value (through subsidy).
- **On health-** Its health and climate costs are pegged at US\$ 75 billion per year. It is a major cause of Baby Blue syndrome.
- **On Agricultural Productivity-** Excessive nitrogen in the form of fertilizer **brings down the carbon content** of the soil, result in diminishing returns in terms of crop yield.
- **On Environment:** Excessive eutrophication which turns water body into Dead Zone, substance like nitric acid is a component of acid rain. Further, Nitrogen particles make up the largest fraction of PM2.5, class of pollutants.

Way forward

- **Rationalised fertiliser subsidy:** According to the report of the **Commission for Agricultural Costs and Prices (CACP)**, subsidy on urea should be reduced, while increasing it on Phosphorus & Potassium to arrest the hugely adverse NPK ratio.
- **Nitrogen Use Efficiency (NUE)** (which indicates the ratio between the amount of fertilizer nitrogen removed from the field by the crop and the amount of fertilizer nitrogen applied) should be increased in order to maintain equilibrium between soil and fertilizer.
- **Recycling of industrial and Sewage waste** for manure could decrease 40% of fertilisers usage in country. It could also lead to production of food more sustainably and open new economic opportunity in organic manure segment.
- **Efficient Agricultural Practices**-such as precision agriculture (employs modern farming technique to increase food productivity like use of global positioning systems, electromagnetic soil mapping, soil sample collection), planting buffers of tree shrubs (help in absorbing or filtering out nutrients) are needed.

Facts About Nitrogen

- Nitrogen constitutes 78 percent of Earth's atmosphere and in the form of nitrous oxide (N_2O) it acts as a greenhouse gas (GHG).
- It is used in manufacture of ammonia, fertilizer, nitric acid and also use as refrigerating agent.

Steps taken to control Nitrogen pollution

- **Soil Health Card** provides information to farmers on nutrient status of their soil along with recommendations on appropriate dosage of nutrients for crop.
- **Mandatory neem-coated urea production** to slow down the dissolution of nitrogen into soil, resulting into less nutrient requirement.
- **Bharat Stage Norms** aim to regulate the harmful emission from vehicle. like carbon monoxide (CO), unburnt hydrocarbons (HC), Nitrogen Oxides (NOx) and Particulate matter (PM).
- **National Air Quality Index (NAQI)** has been implemented in which Nitrogen Dioxide is one of the eight pollutants to be controlled and monitored.

5.4. DEAD-ZONE

Why in News?

Scientist have recently predicted that the dead zone in Gulf of Mexico will become larger.

About Dead Zones

- Dead zones (**Hypoxic zones**) are areas of the ocean (**occasionally in lakes and even rivers**) where oxygen has **fallen to such low levels** that most marine life cannot survive.
- Dead zones are **reversible** if their causes are reduced or eliminated.

Causes

- **Rising sea temperatures-**
 - For each degree of ocean warming, oxygen concentration goes down by 2 percent.
 - Over the short term, the **higher temperatures slow the rate of ocean circulation**, exacerbating **regional oxygen depletion**.
 - It **causes layers of ocean water to stratify** so the more oxygen-rich surface waters are less able to mix with oxygen-poor waters from the deeper ocean.
 - The higher temperatures are putting more stress on marine species, causing their **metabolisms to speed up** and their **need for oxygen to increase**.
- **Nutrient pollution** from sources such as agriculture and sewage, is responsible for a dramatic rise in “dead zones” in the world’s oceans.

Impacts of Dead Zones

- **Impact on Global Warming-** As Oxygen levels fall, the pace of climate change can accelerate, with low oxygen levels triggering the release of chemicals like nitrous oxide. This greenhouse gas is **300 times more powerful** than carbon dioxide at trapping heat in the atmosphere.
- **Impact on Corals-** Low oxygen levels of **2 milligrams of oxygen per litre of water or less**, can kill coral reefs.
- **Impact on Human-** Humans also suffer at an economic level as **Chile’s 2016 toxic tides** wiped out 20% of its salmon stock, costing the country \$1 billion in lost sales.

5.5. ENVIRONMENTAL REFUGEE

Why in news?

Recently, World Refugee day was observed on 20th June, 2018, which indicates toward the glaring discrimination being faced by the Environmental Refugee/ Climate Refugee.

Background

- **Definition:** According to **International Organization for Migration, Environmental migrants** are persons or groups of persons who, predominantly for reasons of sudden or progressive change in the environment that adversely affects their lives or living conditions, are obliged to leave their habitual homes, or choose to do so, either temporarily or permanently, and who move either within their country or abroad.
- According to **Internal Displacement Monitoring Centre**, every year since 2008, an average of 26.4 million persons around the world have been forcibly displaced by floods, windstorms, earthquakes or droughts.
- **Vulnerable Countries:** Disaster displacement occurs mostly in low and lower-middle income countries, and is expected to increase in the future with the impacts of climate change and more extreme weather.
- According to an **UN Office for Disaster Risk Reduction (UNISDR) report**, India has been ranked as the **world's most disaster-prone country** for displacement of residents.

UN Refugee Convention (1951)

- It grants certain rights to people fleeing persecution because of race, religion, nationality, affiliation to a particular social group, or political opinion.
- The rights they are entitled to follow the principles of non-discrimination, non-penalisation, and nonrefoulement.
- **Cross-border displaced** who have migrated due to climate change are not recognised as refugees under the **1951 Refugee Convention or its 1967 protocol**, and thus do not qualify for protection under national or international legal frameworks for refugee protection.

Other Challenges faced by migrants

- **Trafficking and forced labour:** Women and children are often an easy target for inhuman treatment.
- **Harassment by police and officials** of states where they have migrated to
- **Exploitation** by local contractors who force them to accept lower wages.
- No access to schools for their children and no health services for the family.
- **Disruption** of cultural and community ties.

ILO right of Migrant

- Freedom of association and the effective recognition of the right to collective bargaining,
- Elimination of forced or compulsory labour,
- Abolition of child labour and
- Elimination of discrimination in respect of employment and occupation.

Issues Faced by Environment Refugee

- **Slow onset events and implications for human rights**
 - It can negatively impact an array of internationally guaranteed human rights by denying the rights to adequate food, nutrition, livelihood, water, health, and housing.
 - People especially in vulnerable situations are at the greatest risk of suffering human rights harms as a result of their adverse effects
- **Impact on Cultural Heritage:** The loss of traditional territories land threatens the existence of traditional and cultural heritage of minority and indigenous groups
- **Impact on Right to work:** Migrant are **often abused and discriminated** in migrated country during work, which is against International Labour Organization's (ILO) Declaration on the Fundamental Principles and Rights to Work.
- **Cases of Migration Emergencies:** It refers to construction of barriers to entry and practices such as the use of violence, pushbacks, dangerous interceptions, the erection of fences, and administrative sentences that put migrants at risk.
- **Vulnerability of South ASIA:** Region has experienced slow onset changes like desertification, glacial melting, drought, riverbank erosion, sea water intrusion etc.
 - It is home to 64% of the world's total population that is exposed to floods annually
 - **India's Vulnerabilities:** India's 6% population, lives 10 metres or less above sea level. Any change in sea level can trigger mass displacement, and other issues like food shortage, salt water intrusion, decline in livelihood, health risk like epidemic, etc.

Slow Onset Events: It includes sea level rise, increasing temperatures, ocean acidification, glacial retreat, salinization, land and forest degradation, loss of biodiversity, and desertification.

- It has affected millions of people, more than double than those affected by storms and extreme events over the same period of time.

Way Forward

- **Accepting Principle of non-refoulement:** State must provide human rights protections for all people under its jurisdiction, including migrants in irregular situations.
- **Human rights-based approach:** States must be obligated to respect and protect their commitment through robust implementation of human rights obligations to address the needs and vulnerabilities of those adversely affected by slow onset events.
- **Adopting principle of common but differentiated responsibility (CBDR) alongwith polluter pays principle, and climate justice approach**, so that most responsible for climate change should bear the primary responsibility for addressing its impacts.
- **Implementing International convention in soul and spirit** to avoid 2 billion climate refugees by the end of the 21st century.
- **Comprehensive Policy Formulation:** State must frame policy by adopting participatory decision making process in context of climate change to put people at the centre of solutions.
- **Proactive adaptation measures** that incorporate indigenous knowledge which offer agricultural intervention, secure livelihoods and enhance adaptive capacity.

Nansen Initiative (2012)

- It's a state-led consultative process to build consensus on a protection agenda addressing the needs of people displaced across borders in the context of disasters and the effects of climate change.

Nansen Initiative Protection Agenda for Cross-Border Displaced Persons (2015)

- **Aim:** To enhance understanding, provide a conceptual framework, and identify effective practices for strengthening the protection of cross-border disaster-displaced persons
- **Strategy:** It supports an approach that focuses on the integration of effective practices by States and (sub-) regional organizations into their own normative frameworks in accordance with their specific situations and challenges.
- It identifies effective practices to manage disaster displacement risk in the country of origin to prevent displacement by
 - reducing vulnerability and building resilience to disaster displacement risk,
 - facilitating migration out of hazardous areas before disasters strike,
 - conducting planned relocation
 - responding to the needs of internally displaced persons
- **Platform on Disaster Displacement (PDD):** It was launched in 2016, to implement the recommendations of the **Nansen Initiative Protection Agenda**.

- **According to Refugee status to environmental refugees:** People migrating due to environmental disasters should be accorded 'refugee' status in international law for addressing challenges of climate-change induced migration comprehensively.

5.6. FISCAL COSTS OF NATURAL DISASTERS

Why in news?

Recently, IMF released a report on "How To Manage The Fiscal Costs Of Natural Disasters".

Background

- According to **International Disaster Database** annual global economic losses on account of disasters are estimated at around \$306 billion.
 - Similarly, the **cost of natural disasters in India** since 2000 is estimated at Rs 4 lakh crore with over 75,000 deaths.
- According to **World Meteorological Organisation**, for Indian Subcontinent, 2017 was the most expensive year on record for severe weather and climate events.
- **Sendai Framework for Disaster Risk Reduction** calls for reducing direct disaster economic loss in relation to global gross domestic product (GDP) by 2030.

Finding of Report

- **Disproportionate Impact of Disaster on Low-income countries:** They tend to suffer large and lasting damage relative to their economic sizes and populations. It's also exacerbated by high levels of poverty, climate change, rapid urbanisation and exposure to the entire spectrum of natural hazards including drought, floods, cyclones, earthquakes and heatwaves.
- **Fiscal Imbalance:** Natural disasters can deplete a government's fiscal position by eroding the revenue base (on average by 10%) and increasing expenditures (on average by 15%).
- **Impact on Socio-economic Development:** Disasters undermine economic growth and set back development objectives, such as poverty reduction, especially in developing and low-income countries with significant infrastructure gaps and institutional constraints.
- **Crowding out of Fund:** Disaster often increases public debt, leading to higher borrowing by government, and dampening of investment climate in country.

Suggestion in Report

Sound Public Financial Management (PFM)

Strategy: This can be achieved by designing fiscal risk reduction through:

- **For small- and medium-scale natural disasters:** Budgetary support should be the main instrument for managing the

Disaster Risk Insurance

- **Advantages**
 - **Legal Entitlement:** Policy holders are legally entitled to compensation instead of being at the mercy of government.
 - **Timely Intervention:** They can reach a large number of people within a short period of time
 - **Easing of fiscal burden:** By reducing or even avoiding long-term costs to public financial stability, economic growth, optimal allocation of capital and human development.
 - **Governance:** It demands structured decision-making processes around, leading to improved and efficient disaster risk governance.
 - **Gender impacts:** Women in the community are more receptive than men to the benefits of microinsurance
- **Challenges**
 - **Moral hazard** is one of the primary risks associated with indemnity insurance as policyholder increases his or her risk exposure by taking fewer preventative actions
 - **Opportunity Cost of Premium** payments is an important factor conditioning the impact of risk transfer upon the vulnerability of policyholders.
 - **Political Viability:** It is hard to justify use of taxpayer money on premiums to an insurance scheme that potentially would not pay out in some case of a disaster.
 - **Lack of Data:** There is scarce empirical evidence demonstrating an operational link between risk transfer and risk reduction
 - **Low capacity from the policyholders** leading to misunderstanding of the risk context, lack of financial literacy and failure to accurately correlate risk models with losses on the ground.
 - Affordability, availability and reliability are some practical challenges.

fiscal impacts of probable or possible small- and medium-scale natural disasters.

- **Creating Contingency Reserves in the Budget:** To tackle unforeseen expenditures and to cover the costs of moderate but frequent natural disasters.
- **For large-scale natural disasters:** Innovative options like **Catastrophe bonds and insurance** should be the most common instrument along with budgetary support so as to reduce government fiscal exposure on long and large term financing.
 - **Creating Natural Disaster Funds:** It aims to build a **fiscal buffer**, to cover the potential cost of a catastrophic event in a timely manner without endangering long-term fiscal sustainability. On average 3% of budget should be buffered to deal with the fiscal risks associated with natural disasters.
- **Incorporating Escape Clause in Budgets:** To provide **flexibility** with fiscal target and ensuring timely and effective disaster response.
- **Fiscal incentives:** Targeted subsidies to **strengthen resilience** by promoting strong Public Infrastructure, encouraging the retrofitting of existing properties, supporting drought-resilient crops, protecting and expanding forest coverage, and preserving scarce water resources.
- **Transparency:** It's important to **mitigate social and economic consequences** of disaster, by providing accurate and adequate information for **informed decision making** and to maintain the integrity of budget processes.

Way Forward

- **Building Back Better:** According to **World Bank**, when countries rebuild stronger, faster and more inclusively after natural disasters, they can reduce the impact on people's livelihoods and well-being by as much as 31%, potentially cutting global average losses from \$555 billion to \$382 billion per year.
- **Invest in risk reduction:** According to **Global Assessment Report (GAR) 2015**, an annual global investment of \$6 billion in disaster risk management strategies would generate total benefits in terms of risk reduction of \$360 billion.
- **Encouraging economic diversification:** To minimize the impact of disaster on any particular sector.
- **Increasing Insurance Penetration** for risk sharing with government in post disaster response.

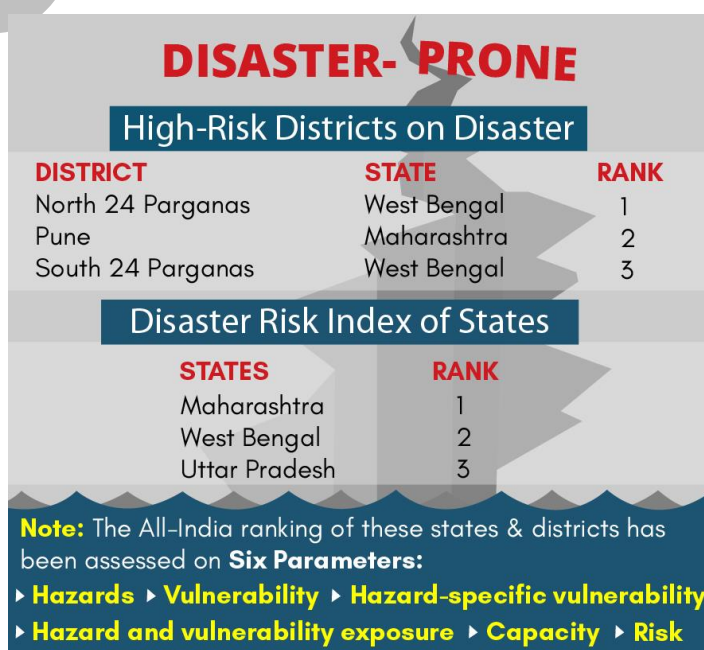
5.7. NATIONAL DISASTER RISK INDEX

Why in news?

The Union ministry of home affairs with the support of United Nations Development Programme (UNDP) have prepared for the first time a **national disaster risk index** for India.

More about the Index

- The disaster risk index would map hazards and vulnerabilities including economic vulnerabilities across 640 districts and all states including UTs.
- The index factors in exposure of population, agriculture and livestock, environmental risk and the steps taken by the administration to mitigate the risks.
- Some states have made significant progress in disaster risk reduction (DRR) by building resilient infrastructure and investing in early warning systems.
- Capacity building by Gujarat, Tamil Nadu, Assam, Tripura and Himachal Pradesh has lowered their net risk to population and economic losses while States like UP, MP are considered high-risk states despite facing lower natural hazard possibilities due to high vulnerability and low capacity-building.



- It will be used to prepare a composite disaster scorecard (DSC) to have a comprehensive assessment of hazards, vulnerabilities and risks of disasters at different levels, prevention of new risks and mitigation of existing risks, and mainstreaming DRR across different sectors of development.
- The index is in line with India's commitment to the Sendai Framework, where it has to substantially bring down disaster losses in terms of lives and properties.

5.8. OFF-SHORE WIND POWER

Why in news?

- The Ministry of New & Renewable Energy (MNRE) recently invited Expressions of Interest (Eoi) for the country's first 1 GW offshore wind project in Gulf of Khambat.

Advantages of offshore wind power over the onshore wind power

- **Greater area available for setting up large projects:** one of the primary reasons for moving towards off-shore projects is the lack of suitable wind turbine sites on land.
- **Higher wind speed:** Therefore, the offshore wind power's electricity generation is higher per amount of capacity installed.
- **Consistent wind speed:** the effective use of wind turbine generating capacity will be higher at sea than on land.
- **Less visual impact:** As these sites are located far from land they have less visual impact which helps with public acceptance issues.
- **Close to load centres:** The off-shore wind farms are usually located near to the cities and load centres thus transmission losses are minimised.
- **Environmental impact:** low global warming potential per unit of electricity generated, comparable to that of onshore wind farms.

Challenges

- **Cost:** Costs for foundations, installation, electrical connections and operation and maintenance (O&M) are a large share of the total for offshore installations compared to onshore wind farms.
 - Sustained high-speed wind, high humidity and salt water make every aspect of installation and operation much more difficult, time-consuming, more dangerous and far more expensive than sites on land.
 - The offshore wind industry is not yet fully industrialized, so cost of per unit energy is not economical.
- **Data:** the data required for the calculation of off-shore wind potential and identification of suitable sites is not adequately available. The data can be divided into 2 parts:
 - **Wind resource map:** consists of the wind speed and wind density at certain levels above the sea.

Related information

- **Offshore wind power** is the use of wind farms constructed in bodies of water, usually in the ocean on the continental shelf, to harvest wind energy to generate electricity.
- Globally there has been installation of about 17 to 18 GW of off-shore wind power led by countries such as UK, Germany, Denmark, Netherlands & China.
- In India, there is yet no commercial production of energy from off-shore wind farm. Two regions where preliminary studies are conducted are off coast of Gujarat and Tamil Nadu which have shown significant potential.
- MNRE has declared medium and long-term target for off-shore wind power capacity additions, which are 5 GW by 2022 and 30 GW by 2030.
- **For onshore wind power**, the generation capacity in India has significantly increased in recent years. Currently the total installed wind power capacity is 34.04 GW, the fourth largest installed wind power capacity in the world.

"National Offshore Wind Energy Policy –2015"

- National Institute of Wind Energy (NIWE) has been authorized as the Nodal Agency for development of offshore wind energy.

Objectives

- To Explore and Promote Deployment of Offshore Wind Farms in the Exclusive Economic Zone (EEZ) of the country, including those under Public Private Partnership.
- To Promote Investment in Energy Infrastructure.
- To Achieve Energy Security and Reduce Carbon Emissions
- To Promote Research and Development and encourage Indigenization of the Offshore Wind Energy Technology.
- To Create Skilled Manpower and Employment in the offshore wind energy sector.
- To develop coastal infrastructure and supply chain to support heavy construction & fabrication work and the Operation & Maintenance activities.

- **Bathymetric data:** gives the information about the sea depth at various positions. At present there is no such data available for the Indian sub-continent.
- **Environmental impact:** physical presence of offshore wind farms and underwater noise associated with the turbines may alter the behavior of marine mammals, fish, and seabirds with attraction or avoidance.

Way forward

- India has more than 7600 Kilometres of coast and associated Exclusive Economic Zone, hence the prospects of development of offshore wind power are very bright.
- The Wind resource map and bathymetric map should be prepared along the coast to adequately map the potential of offshore wind power. Research and development should be done to deal with other concerns specially the environmental concerns.
- Government should provide adequate support to realise the potential as per the “**National Offshore Wind Energy Policy –2015**”.
- The government should take the **feed-in-tariff (FIT) route** to support off-shore wind power (FIT enables anyone who generates electricity from renewable energy source – be it a home owner, small business or a large electricity utility - to sell it to the grid and receive guaranteed long-term payments at a predetermined rate for energy transferred.)

5.9. ELECTRIC VEHICLES

Why in news?

Recently a panel, headed by Road Transport Secretary Y S Malik, has presented a 15 point plan to aid car manufacturers to switch from Internal Combustion Engines (IECs) to Electric Vehicles (EVs).

More on news

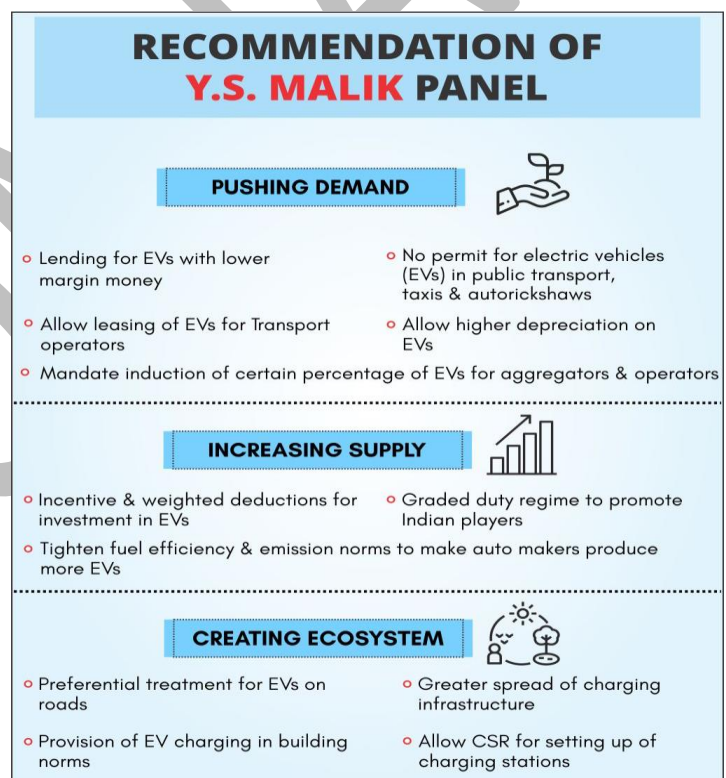
- According to panel, the fuel efficiency norms have to be lowered by 20-25 percent over FY 2017-18 data to have approximate induction of 3 to 5% EVs, as against total manufactured vehicles including cars, three-wheeler, and two-wheeler.
- Earlier, the Ministry of Road Transport and Highways has mandated fuel efficiency norms that require cars to be 30% more fuel efficient by 2022.

Need for electric vehicles

- Use of electric vehicles will help in fulfilling our INDC 2030 goals (cutting CO₂ emissions intensity in GDP by 33-35% w.r.t. 2005 levels). It will also help to combat increasing air pollution load (PM2.5 & PM10) in Indian Cities as Fossil fuel based transportation is second largest source of carbon dioxide emission.
- Shift towards EVs will help cut oil imports (India has set targets to cut oil imports by 10% by 2022). EVs convert about 59%–62% of the electrical energy to power at the wheels. Conventional gasoline vehicles only convert about 17%–21% of the energy stored in gasoline to power at the wheels.
- Creation of Industries and Infrastructure will create jobs in India both upstream and downstream supply chain.

Challenges

- **Upfront cost of EVs is very high**, about 4-5 times of conventional diesel vehicles. Most critical component which decide EVs cost is Lithium Ion Battery and about 95% of Global Lithium Production comes from China, Chile, Argentina, Australia. India would need to acquire mineral assets/rights in these nations or Make Outside India will have to be explored.



- **Lack of comprehensive policy:** India needs to bring out comprehensive reforms involving all stakeholders for large scale adoption of EVs.
- **Need of robust data reporting system and independent verification tests** to verify compliance with the standards as the entire system depends on self-reporting by the car industry.
- **Lack of research and development:** is a big challenge in up scaling indigenous development. Unlike in other developed countries Indian academic sector is not adequately contributing in developing cutting-edge technologies.
- **Availability of renewable energy:** In India, thermal power plants (biggest greenhouse gas emitter) constitute 65-68% of electricity generation, and there is very low share of renewable energy. Hence large scale adoption of EVs could lead to sudden surge in electricity demand which could potentially provoke greater carbon dioxide emissions.

Government steps

- **National Electric Mobility Mission Plan (NEMMP) 2020** with an aim to achieve national fuel security by promoting hybrid and electric vehicles in the country. It set an ambitious target to achieve 6-7 million sales of hybrid and electric vehicles year on year from 2020 onwards.
- **Scheme for Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles in India (FAME)**, as a part of its NEMMP. The scheme has four focus areas: technology development, pilot project, charging infrastructure and demand creation.
- The Union government has decided that from 2030 only electric & hybrid vehicles will be sold.
- The schemes like Make In India & Smart City Mission can be integrated to promote the use of the electric vehicles and achieve such ambitious targets.
- The Indian Space Research Organization (ISRO) has called upon industry leaders to make bids to avail its indigenously developed Lithium-Ion Cell Technology.

5.10. SAND IMPORTS

Why in News?

States are amending laws in recent months to facilitate sand imports to meet the rising demand.

More about the news

- **Huge demand for the natural mineral:**
 - According to the United Nations Environment Programme (UNEP), sand, along with gravels, are already the most extracted minerals—accounting for 69-85% of the minerals mined every year. Demand of sand in India was around 700 million tonnes in FY-2017 and it is increasing at the rate of 6-7% annually.
 - According to the Central Statistics Office (CSO), the **construction sector** has grown at a Compound Annual Growth Rate of 6 per cent and because of rapid urbanization and infrastructure growth and government initiatives like Housing for all, the demand for Sand is set to rise.

Steps taken to facilitate Sand Import

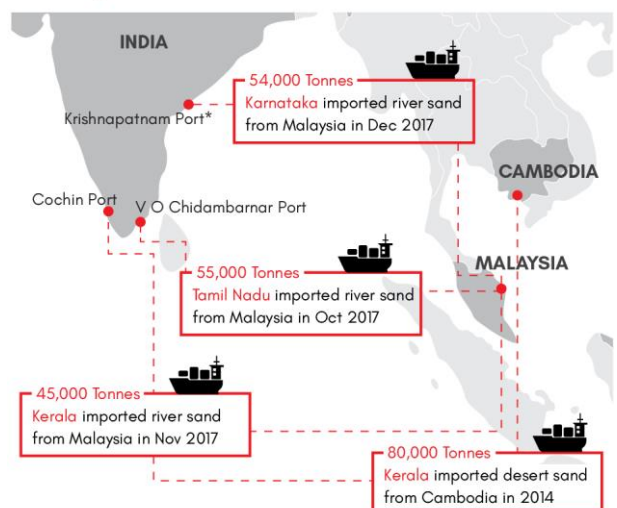
- In 2014, Union Ministry of Commerce and Industries allowed import of sand to increase its availability.
- Karnataka, Kerala amended mineral concession rules laying down the procedure for sand imports to facilitate importers.
- In March, Tamil Nadu issued a tender notice to import 3 million tonnes of river sand from various countries at Rs 548.73 crore over the next two years.
- Sand mining framework launched in March 2018 also prescribed the use of imported sand (as an alternative to sand mining) after it qualifies for quality standards and is free from phyto-sanitary issues.

Benefits of sand imports in India

- **Can fight sand shortage in most states:** In 2017-18, a survey of 14 major sand producing states by the Ministry of Mines (MoM) estimated that the demand of sand far outstrips supply in all the states, except Haryana, Uttarakhand and Madhya Pradesh. Imported sand though tends to be costly, is suitable for high deficit areas.

SAND TRAIL

States are tweaking laws in recent months to facilitate sand import



*Karnataka imports through Andhra Pradesh's Krishnapatnam port.

- **Addresses ban imposed by courts and NGT:** Bans by the courts or the National Green Tribunal (NGT) have led to the shortage of sand supply in many states, for instance, last year NGT banned sand mining in parts of Maharashtra and Uttarakhand High Court imposed a four-month state-wide ban on sand mining.
- **Tackling illegal quarrying:** there is rampant illegal mining going on in major river beds because of exploitation of legal loopholes, poor implementation of laws, absence of robust monitoring mechanisms and nexus between politicians and mafias. The 2017 report of the Comptroller and Auditor General (CAG) found that illegal sand mining cost the state exchequer of Uttar Pradesh a massive Rs 477 crore in 2015-16.
- **Can reduce the cost of sand** in long run in the domestic market, hence making affordable housing feasible.
- **Benefits for exporting countries:** Some south-east Asian countries such as Malaysia and Indonesia have ample sand available in their country, which if not removed could lead to floods. The sand could be imported to India.

- **Desert sand and sea sand not suitable for construction:** In deserts, sand grains are too round because of the heavy winds, making them unable to stick together.
- Sea sand is better, but its salt content result in corrosion of steel in reinforced concrete. River-sand thus become a highly demanded mineral.

Mines and Minerals (Development and Regulation) Act, 1957 (MMDR) allows states to make rules related to minor minerals, such as building stones, gravel, ordinary clay, ordinary sand and construction sand.

Suggestions and way forward

- **Use of alternative sources** such as construction and Demolition (C&D) wastes and Manufactured Sand (m-sand):
 - India generates 25-30 million tonnes of C&D waste every year, but currently processes just 5 per cent of it whereas Singapore recycles 98% using it to meet its construction demand.
 - **Extracting Sand from coal overburden and use of Silt from major dams** can also be explored as an alternative.
- As suggested by the **Sand mining framework of 2018**, there is an urgent need to implement the **Sustainable Sand Mining Guidelines of 2016** which among other things had suggested the **use of information technology** to monitor sand mining, creation of **District Survey Reports (DSR)** to estimate sand availability in the mining districts.

(For more details on Sand mining framework 2018 and sustainable Sand mining guideline refer VisionIAS March 2018 current affairs.)

5.11. DAM SAFETY BILL 2018

Why in news?

- The Union Cabinet has approved the proposal for introduction of Dam Safety Bill, 2018 in the Parliament
- **Significance of the bill:**
 - About 75 percent of the large dams in India are more than 25 years old and about 164 dams are more than 100 years old. A badly maintained, unsafe dam can be a hazard to human life, flora and fauna, even India has had 36 dam failures in the past.
 - It address all issues concerning dam safety including regular inspection of dams, Emergency Action Plan, comprehensive dam safety review, adequate repair and maintenance funds for dam safety, Instrumentation and Safety Manuals.
 - It lays onus of dam safety on the dam owner and provides for penal provisions for commission and omission of certain acts.

National Dam Safety Authority

- It maintains liaison with the State Dam Safety Organizations and the owners of dams for standardization of dam safety related data and practices;
- It shall provide the technical and managerial assistance to the States and State Dam Safety Organizations;
- It maintains a national level data-base of all dams in the country and the records of major dam failures;
- It shall examine the cause of any major dam failure;
- It shall accord recognition or accreditations to the organizations that can be entrusted with the works of investigation, design or construction of new dams;

Key features of the proposed Bill

- The objective of this Bill is to help develop uniform, countrywide procedures for ensuring the safety of dams and provides for proper surveillance, inspection, operation and maintenance of all specified dams in the country to ensure their safe functioning.

- It provides for constitution of a **National Committee on Dam Safety** which shall evolve **dam safety policies** and recommend necessary regulations
- It provides for establishment of **National Dam Safety Authority** as a **regulatory body** which shall discharge functions to implement the policy, guidelines and standards for dam safety in the country.
- The Bill provides for constitution of a **State Committee on Dam Safety** by State Government.

About State Committee on Dam Safety

- It will ensure proper surveillance, inspection, operation and maintenance of all specified dams in that State and ensure their safe functioning.
- Every state having specified number of dams will establish **State Dam Safety Organization** which will be manned by officers from the field dam safety preferably from the areas of dam-designs, hydro-mechanical engineering, hydrology, geo-technical investigation, instrumentation and dam-rehabilitation.

5.12. SOUTH ASIA'S HOTSPOTS: WORLD BANK REPORT

Why in News?

Recently the World Bank has released its report titled **“South Asia’s Hotspots: The Impact of Temperature and Precipitation changes on living standards”**.

More about report

- It estimates how changes in temperature and monsoon patterns will **affect GDP and living standards in South Asian region**.
- The report identifies **“hotspots”** as the states /districts where these changes will have **a notable effect on living standards**.
- It observed six countries in South Asia **Nepal, Afghanistan, India, Pakistan, Bangladesh and Sri Lanka** for the study.
- The report looks at two scenarios: **climate-sensitive and carbon-intensive**. Both show rising temperatures throughout the region in coming decades, with **the carbon-intensive scenario showing greater increases**.
- It will be useful for **designing social welfare programmes** by accounting for local socio-economic characteristics and climate-related risks and **reorient strategies and policies** targeted to hotspot inhabitants, the hidden victims of climate change.

Climate-sensitive

- It represents a future in which **some collective action is taken to limit greenhouse gas emissions** and global annual average temperatures increase to **2.4°C by 2100** relative to pre-industrial levels.

Carbon-intensive

- It represents a future in which **no actions are taken to reduce emissions** and global annual average temperatures will increase **4.3°C by 2100** relative to pre-industrial levels.

Main finding of report

Overall region related findings

- Almost **half of South Asia’s population** now lives in areas that are projected to become **moderate to severe hotspots** under the carbon-intensive scenario by 2050.
- It has found that living standards in **some currently cold and dry mountain areas could improve marginally**. India, Bangladesh, Pakistan and Sri Lanka will be adversely affected by these changes, while Afghanistan and Nepal will benefit as they are relatively cold.
- The report finds that most of the expected hotspots are currently characterized by **low living standards, poor road connectivity, uneven access to markets, and other development challenges**.
- Most of the hotspots included in the report are in inland areas. i.e. there will be **more warming in inland and less warming in coastal areas** beyond 2050.
- Average household consumption in the region will **decline after average temperature exceeds a peak**. Majority of the region’s population lives in areas where temperature is already above the said peak.

India specific findings

- Approximately **600 million people in India** today live in locations that would become **moderate or severe hotspots by 2050** under the carbon-intensive scenario.
- India’s average temperature is predicted to increase by **1.5-3°C if no measures are taken and by 1-2°C if preventive measures are taken along the lines of the Paris Agreement** by 2050

- Rising temperatures and changing monsoon rainfall patterns from climate change could cost **India 2.8% of GDP, and depress the living standards of nearly half the country's population by 2050.**
- States in the **central, northern and northwestern parts of India** emerge as the most vulnerable. **Chhattisgarh and Madhya Pradesh**, which are predicted to experience a decline in living standards of more than 9%, are **the top two 'hotspot' States in India**, followed by Rajasthan, Uttar Pradesh, and Maharashtra.
- Of the top 10 most affected hotspot districts, **7 are in Vidarbha, Maharashtra and the remaining 3 in Chhattisgarh and MP.**
- In the absence of major climate mitigation, **nearly 148 million Indians** will be living in these severe hotspots in 2050.

Recommendations

- No single set of interventions will work in all hotspots. Targeted Policies and actions to address **the specific needs based on local conditions** are required for effective mitigation. **Targeting resources efficiently to the most vulnerable communities and groups** should be a priority.
- **Investing in skills, health, knowledge, better infrastructure, and a more diversified economy** will reduce climate hotspots at the household, district, and country levels.
- **Boosting research and development on new technologies, such as drought-resistant crops**, and other Technological advances, coupled with expanded irrigation systems, will work to make **agriculture less sensitive to climate change** in the long-term.
- Governments should promote private actions on adaptation of new skills for building resilience by policies like **providing weather forecasts and climate risk assessments.**
- For **India specific measures**, targeted interventions for **improving educational attainment, reducing water stress, and improving nonagricultural employment opportunities** can act as a game changer.

5.13. ENSEMBLE PREDICTION SYSTEMS (EPS)

Why in News?

IMD recently launched the Ensemble Prediction Systems (EPS) to provide probabilistic weather forecasts upto next 10 days.

About EPS

- It has been developed jointly by the **IMD, National Centre for Medium Range Weather Forecasting (NCMRWF) and the Indian Institute of Tropical Meteorology**
- The new system consisting of **eight petaflops high-power computing systems** shall improve upon deterministic forecasts that are prone to high margins of error.
- Under this, **the area of spatial resolution**, which is 23 km presently, **will reduce to 12 km**, enabling the meteorological department to give **district-level warning.**
- With this new model, **India joins the US** with a model that predicts with a 12 km resolution. Only the '**European Center for Medium Range Weather Forecast**' has a better 9km resolution.
- Better forecasting would lead to better management of agriculture and water resources and would help to **promote tourism, solar and wind energy.**

India Meteorological Department

- IMD established in **1875**, is a principal government agency **in all matters related to meteorology, seismology and allied subjects.**
- Along with **Indian Institute of Tropical Meteorology (IITM)** and **National Centre for Medium Range Weather Forecasting (NCMRWF)**, is under the administrative control of Ministry of Earth Sciences (MoES).

5.14. GOOGLE FOR WATER RESOURCE MANAGEMENT

Why in News?

Recently, Central water commission (CWC) has entered into a Collaboration Agreement with Google for better management of water resources and flood management.

About the move

- CWC and Google will share technical expertise in the fields of artificial intelligence, machine learning, geospatial mapping and analysis of hydrological observation data to collaborate on
 - Improving flood prediction systems, which will help provide location-targeted, actionable flood warnings,
 - High priority research project utilizing Google Earth Engine to help visualize and improve flood management.
 - A cultural project to build online exhibitions on the Rivers of India.

The information in the form of likely extent and depth of inundation would be disseminated with a lead **time of up to 3 days**. For 2018, inundation forecasting would be done on trial basis and the same would be up scaled in near future.

A similar programme launched previously by the government is the **National Hydrology Project** which aims to streamline the **hydro-metrological data** system in country.

Central Ground Water Commission

It is an **attached office** of the Ministry of Water Resources, River Development and Ganga Rejuvenation ((MoWR, RD&GR).

Functions: Control, conservation and utilization of water resources throughout the country, for purpose of Flood Control, Irrigation, Navigation, Drinking Water Supply and Water Power Development.

National Hydrology Project

World bank assisted programme launched in 2016.

Objective: to improve the extent, quality, and accessibility of water resources information, decision support system for floods.

- Setting up of a system for timely and reliable water resources data acquisition, storage, collation and management.

It provides for establishment of **National Water Informatics Centre (NWIC)** as an independent organization under the control of MoWR, RD&GR.

It assists in promoting 'efficient and equitable' use of water, **especially groundwater**, to the village level and provide information on quality of water as well.

5.15. BLUE FLAG CERTIFICATION

Why in news?

13 Indian beaches have been shortlisted for the Blue flag certification.

More on news

- The Ministry of Environment, Forest and Climate Change had started a pilot project under a **Unified Coastal Areas Management Programme** to develop the Indian beaches according to the Blue Flag standards in December 2017.
- This project aims to
 - improve the aquatic habitat by cleaning the growing pollution and garbage in the Indian beaches.
 - develop ecological tourism with constant progress and development of tourist facilities.
- **Chandrabhaga beach** of Odisha's Konark coast was the first to complete the tag certification process will be **the first in Asia** to get the Blue Flag certification.
- Apart from it, **12 other beaches** across are also being developed by the **Society for Integrated Coastal Management (SICOM)** as **blue flag beaches which include** Maharashtra's Chiwla and Bhogave beaches and one beach each from Puducherry, Goa, Daman and Diu, Lakshadweep and Andaman and Nicobar Islands.
- An integrated coastal management scheme, referred as **Beach Management Service (BeaMS)** has also been introduced by the ministry to reduce existing pollutants on beaches and achieve such high international standards.

Society for Integrated Coastal Management (SICOM)

- It has been established under the aegis of Ministry of Environment, Forests and Climate change, Government of India.
- The main objectives of SICOM are as follows:
 - To support implementation of Integrated Coastal Zone Management (ICZM) activities in India.
 - To implement the World Bank assisted India ICZM Project
 - To provide Research Development (R&D) and stakeholders participation in management of the Coastal areas in India.
 - To undertake any additional work or function as may be assigned by Ministry of Environment, Forests and Climate Change from time to time in the area of Coastal Management and other related activities.

Blue Flag Standards

- The Blue Flag beach standards were established by **Copenhagen-based Foundation for Environmental Education (FEE)** in 1985 in France.
- The Blue Flag is an environmental award for beaches, sustainable boating tourism operators, and marinas.
- Only local authorities or private beach operators can apply for a Blue Flag for beaches.
- The criteria for Blue Flag beaches cover four main area:
 - water quality,
 - environmental management,
 - environmental education and
 - safety.

5.16. RARE SPIDER REDISCOVERED

Why in news?

Recently, a rare spider (both a male and a female spider) was rediscovered from Wayanad Wildlife Sanctuary in Western Ghats, Kerala.

More from news

- A team of researchers from Centre for Animal Taxonomy and Ecology (CATE) discovered the spider named **Chrysilla Vollupe** after 150 years which was believed to be extinct.
- The rediscovery is significant for the fact that the female specimen was spotted for the first time and it also points to the need to conduct more explanatory surveys of faunal diversity of India.

Wayanad Wildlife Sanctuary

- Wayanad Wildlife Sanctuary is an **animal sanctuary** in Wayanad, Kerala, India.
- It was **established in 1973** and is a contiguous to **protected area network** of Nagarhole and Bandipur of Karnataka on northeast and Madumalai of Tamil Nadu on southeast.
- It is part of the **Niligiri Biosphere Reserve** and is one of the Evergreen Forests in India with more than 250mm rainfall.

About Chrysilla Vollupe

- The Spider belongs to the family of **jumping spider** (Salticidae).
- **Female spider** has blue iridescent bluish scales present in the top of head region of female and orange bands on both sides of the head.
- The spider has **eight black eyes** are arranged in the front and sides of head region.
- The spider makes a retreat between green leaves of small plants.

CAPSULE MODULE *ON* ETHICS GS PAPER IV

The Capsule module on ETHICS- PAPER IV program is a 6-day weekend course that will help civil service aspirants to be part of a unique, comprehensive coverage of entire syllabus of Paper IV from Vision IAS for Mains 2018.

Starts: **21st July**

KEY HIGHLIGHTS/ FEATURES:-

- Module is meticulously designed based on last few years UPSC papers.
- Thrust on understanding different terms, different dimensions & philosophical underpinnings of ethics and their application in Governance.
- Intensive Case Study Sessions.
- Session on how to write good answers.(Mark fetching techniques)
- Daily assignment and discussion.
- Printed Study material on whole syllabus in addition to special value addition booklet.



6. SCIENCE AND TECHNOLOGY

6.1. ARTIFICIAL INTELLIGENCE FOR INCLUSIVE GROWTH

Why in News?

Recently NITI Aayog released a 'national strategy for artificial intelligence', to suggest ways to promote adoption of machine learning in key areas of the economy.

Artificial Intelligence (AI)

- It refers to the ability of machines to perform cognitive tasks like thinking, perceiving, learning, problem solving and decision making.
- It enables computer system to carry out task on their own that otherwise requires human intelligence.

Machine Learning and Deep Learning

- Machine Learning, a term coined by **Artur Samuel in 1959**, based on the idea that **systems can learn from data, identify patterns** and make decisions with minimal human intervention.
- Deep Learning is a **technique for implementing Machine Learning**. It is inspired by the structure and function of the brain called artificial neural networks.

Importance of AI

- AI has the potential to overcome the physical limitations of capital and labour and open up new sources of value and growth.
- AI has the potential to drive growth by enabling:
 - **Intelligent automation** i.e. ability to automate complex physical world tasks. For e.g.: A recent study found that a Google neural network correctly identified cancerous skin lesions more often than expert dermatologists did.
 - **Labour and capital augmentation**: enabling humans to focus on parts of their role that add the most value, complementing human capabilities and improving capital efficiency.
 - **Innovation diffusion** i.e. propelling innovations through the economy.
- **Role in social development and inclusive growth**: access to quality health facilities, addressing location barriers, providing real-time advisory to farmers and help in increasing productivity, building smart and efficient cities and infrastructure to meet the demands of rapidly urbanising population are some of the examples that can be effectively solved through AI.






Focus Areas for AI Intervention: NITI Aayog has identified **five focus sectors** that are envisioned to benefit the most from AI in solving societal needs:

- Healthcare
- Agriculture
- Education
- Smart Cities and Infrastructure
- Smart Mobility and Transportation

Key Challenges to the Adoption of AI in India

- **Lack of broad based expertise** in research and application of AI: Global AI Talent Report 2018 presents a gloomy picture of India in terms of PhD educated researchers, lack of experts in AI.
- **Absence of collaborative approach** to adoption and application of AI.
- **Lack of Trained professionals**: only around 4% of Indian AI professionals are trained in emerging technologies such as deep learning.
- **Absence of enabling data ecosystems** such as access to intelligent data,

Application of Artificial Intelligence in the focus sectors

	HEALTHCARE	<ul style="list-style-type: none">• Early Detection• Access to quality health Care• Making Healthcare more affordable• Training Research
	AGRICULTURE	<ul style="list-style-type: none">• Enhancing Farmer's Income• Increasing Farm Productivity• Reducing the wastage• Weather forecasting• Soil health Monitoring and Restoration• Precision Farming
	EDUCATION	<ul style="list-style-type: none">• Improved access and quality of Education.
	SMART CITIES and INFRASTRUCTURE	<ul style="list-style-type: none">• Urban Planning.• Effective solutions for crowd management.• Develop resilience against Cyber Attacks.
	SMART MOBILITY and TRANSPORTATION	<ul style="list-style-type: none">• Smarter and safer modes of transportation.• Improve traffic and congestion problem.• Reduce Traffic Deaths.• Optimizing the Parking

- **High resource cost** and low awareness for adoption of AI
- **Privacy and security** including a lack of formal regulations around anonymisation of data.

2-Tier Research Architecture proposed by NITI Aayog to address India's AI Aspirations	
Centre of Research Excellence (CORE)	International Centers of Transformational AI (ICTAI)
It is focused on developing better understanding of existing core research and pushing technology frontiers through creation of new knowledge .	It is entrusted with a mandate of developing and deploying application-based research . Private sector collaboration is envisioned to be a key aspect of ICTAIs.

Way Forward

- Achieving the goal of #AIforAll requires **long term and engaged institutional collaboration** between all the stakeholders including the citizens.
- NITI Aayog paper highlights the **potential for India to become an AI 'garage'**, or solutions provider, for 40% of the world.
- **Allocation of Resources in STEM** (Science, Technology, Engineering and Mathematics) need to be increased.
- **Robust Intellectual Property Framework** – is required to ride the AI innovation wave.
- **More funding should be deployed in AI** and incentives should be provided for researchers.
- **Early Adoption of AI**- be it the research in technology infrastructure, the start-up community developing applications and corporations deploying solutions for their business needs, early adoption will be key determinant in ensuring leadership in AI.
- **AIRAWAT (AI Research, Analytics and knowledge Assimilation platform)** to be utilised effectively to support advancement of AI-based developments.

What India can learn from other countries?

- **US, the global leader in AI** is heavily investing on AI based research and US leadership has largely been **driven by the private sector**.
- **China** has ambition of becoming **world leader in AI by 2030**. The top 9 universities of China have received **government funding** to each establish an AI school and the remaining 32 to include an AI programme as part of their curriculum.
- **EU's Robotics Public Private Partnership**, launched in 2013, is believed to be the biggest civilian research programme in AI in the world.

6.2. INDIA'S FIRST LITHIUM ION (LI-ION) BATTERY PROJECT

Why in News?

- Recently, Central Electro Chemical Research Institute (CECRI), under Council of Scientific & Industrial Research (CSIR) and RAASI Solar Power Pvt Ltd have signed a Memorandum of Agreement for transfer of technology for India's first Lithium Ion (Li-ion) Battery project.

About the Graphene Based Supercapacitors

- It is being produced by the waste/discarded lithium ion battery.
- Graphene oxide collected from lithium ion battery showed high specific capacity at low current and it is novel energy storage system that combined high energy and power density.
- The process involves conversion of graphite into graphene oxide by oxidation and subsequent exfoliation which is then further converted into reduced graphene oxide.
- Supercapacitor are now being used explicitly, in wind turbine pitch control, rail, automobile, heavy industry, telecom system and memory backup.

More on News

- Currently, Indian manufacturers source Lithium Ion Battery from China, Japan and South Korea among some other countries.
- India is one of the largest importers and in 2017, it imported nearly 150 Million US Dollar worth Li-Ion batteries.

About lithium Ion Battery

- These are rechargeable batteries having high energy density and commonly used in consumer electronics.
- It uses intercalated lithium compound instead of metallic lithium as its electrode and is able to store 150 watt-hours electricity per kg of battery.






- Rechargeable lithium-ion batteries cycle 5000 times or more compared to just 400-500 cycles in lead acid.

Importance






- They have applications in Energy Storage System – from hearing aid to container sized batteries to power a cluster of villages, Electric Vehicles (2-wheeler, 3-wheeler, 4-wheeler and Bus), Powering Robots in Processing Industry, etc. Lithium-ion batteries can power any electrical application without the need of physical wires-means wireless.
- They have a potential to enable cost reduction, coupled with appropriate supply chain and manufacturing technology for mass production.
- Technology related to Lithium ion battery can assist in National Electric Mobility Mission, make in India and increasing the share of Clean Energy in the energy basket by generating.

LITHIUM ION BATTERY

ADVANTAGES

-  High energy density – potential for yet higher capacities.
-  Does not need prolonged priming when new. One regular charge is all that's needed.
-  Relatively low self-discharge – self-discharge is less than half that of nickel-based batteries.
-  Low Maintenance – no periodic discharge is needed; there is no memory.
-  Specialty cells can provide very high current to applications such as power tools.

LIMITATIONS

-  Requires protection circuit to maintain voltage and current within safe limits.
-  Subject to aging, even if not in use – storage in a cool place at 40% charge reduces aging effect.
-  Transportation restrictions – shipment of large quantities may be subject to regulatory control. This restriction does not apply to personal carry-on batteries.
-  Expensive to manufacture – about 40 percent higher in cost than nickel-cadmium.
-  Not fully mature – metals and chemicals are changing on a continuing basis.

6.3. QUADRIVALENT INFLUENZA VACCINE

Why in news?

WHO recently for the first time recommended the use of quadrivalent influenza vaccine.

More on news

- **Sanofi Pasteur's injectable influenza vaccine (FluQuadri)** has been recommended for use in the 2018-2019 northern hemisphere influenza season.
- WHO till recently used to recommend trivalent vaccines as they were most produced ones.
- The quadrivalent vaccine will contain four influenza virus strains (two A subtypes and two B subtypes — H1N1 and H3N2, and Victoria and Yamagata respectively).

Vaccines

- Vaccines contain antigen (which generates the protective immune response) that may be a weakened or killed form of the disease-causing organism, or fragments of the organism.
- They can be broadly classified as live or inactivated.
- **Live vaccines** are made using 'wild' viruses or bacteria that have been attenuated, or **weakened**, before being included in the vaccine.
 - After immunisation, the weakened vaccine viruses or bacteria replicate (grow) in the vaccinated person. This means a relatively **small dose** of virus or bacteria can be given in order to stimulate an immune response.
 - Live attenuated vaccines do not usually cause disease in vaccine recipients who have a healthy immune system. When a live attenuated vaccine does cause 'disease', e.g. chickenpox vaccine, it is usually more mild than 'wild' disease.
 - Because these vaccines are so similar to the natural infection that they help prevent, they **create a strong and long-lasting immune response**.
- Inactivated vaccines use the killed version of the germ that causes a disease.
 - Inactivated vaccines usually don't provide immunity (protection) that's as strong as live vaccines.
 - Since the vaccine antigens cannot replicate (grow) in the vaccinated person or cause disease, it can be safely given to a person with an impaired immune system response.
 - Inactivated vaccines **usually require multiple doses**. Some inactivated vaccines may also require periodic supplemental doses to increase, or 'boost' protection against disease.

- While a trivalent influenza vaccine contains both A subtype viruses, it has only one of the B subtype virus, the quadrivalent vaccine offers greater breath of protection as it includes both B subtype viruses.
- The viruses used in the vaccine are killed and this eliminates the possibility of the virus in the vaccine itself causing infection.
- Quadrilateral vaccine was approved for active immunisation of adults of age 18 to 64 years in 2017 by the **Drug Controller General of India (DCGI)**.

Influenza

- Influenza (flu) is a contagious respiratory illness caused by influenza viruses.
- The virus is transmitted easily from person to person via droplets.
- Influenza tends to spread rapidly in seasonal epidemics.
- It is characterized by sudden onset of high fever, aching muscles, headache and severe malaise, non-productive cough and sore throat.
- Since 2011, there have been about 97,000 H1N1 cases and over 7,100 deaths in India according to the Integrated Disease Surveillance Project (IDSP) data.

6.4. SCIENCE-BASED TARGETS

Why in news?

Sixteen Indian companies have recently committed to set science-based targets.

More on news

- The **science-based targets initiative** is a global team comprised of people from all partner organisations – the United Nations Global Compact, CDP, WWF and World Resources Institute.
- Targets adopted by companies to reduce greenhouse gas (GHG) emissions are considered “science-based” if they are in line with the level of decarbonization required to keep global temperature increase below 2 degrees Celsius compared to pre- industrial temperatures.
- Unique to this initiative is the criterion that companies need to commit to setting supply chain or ‘**scope 3**’ targets.
 - That is, if more than 40 per cent of a company’s emissions occur in its supply chain, then the company has to commit to reducing those emissions as well as its direct emissions.
- In March 2018, Mahindra Sanyo Steel became the first Indian company to set its science-based target. Globally, it is also the first steel company to set a target.
- India has committed to generate at least 40 per cent of its electricity from non-fossil fuel sources and decrease carbon emission intensity of GDP by 33 to 35 per cent by 2030.
- Indian companies and multinationals operating in India will play a big role in achieving this target.

6.5. AUGMENTING WRITING SKILLS FOR ARTICULATING RESEARCH (AWSAR)

Why in news?

Recently, AWSAR was launched to reward PhD scholars and post-doctoral fellows.

About AWSAR

- The scheme has been initiated by **National Council of Science and Technology Communication (NCSTC)**, Department of Science & Technology (DST) to encourage, empower and endow popular science writing through newspapers, magazines, blogs, social media etc. by young PhD scholars and post-doctoral fellows during the course of their higher studies.
- Under the scheme best articles which would be selected would be provided monetary incentives.
- **Significance:**
 - Increase supply of informed science writing
 - Encourage the students to write about their work and help them secure the resources
 - tap the potential of young scholars

- Inculcate scientific temperament in the masses.
- Improve the future science communication and popularize science in India.

6.6. DRY SORBENT INJECTION (DSI)

Why in News?

NTPC is opting for dry Sorbent Injection (DSI) system for controlling sulphur dioxide (SO₂) emissions.

More About the News

- CPCB has asked coal-fired thermal plants to comply with the environmental norms by December 31, 2019 and NTPC's power plant in Dadri is the first in the India to opt for DSI System.

About DSI

- Dry Sorbent Injection (DSI) system is a pollution control system for the reduction of SO_x (SO₂, SO₃), HCl and **heavy metals like mercury**.
- It is a dry process in which a sorbent (a material used to absorb or adsorb liquids or gases) is injected into the coal fired boiler where it interacts with various pollutants like SO_x, HCl and the **resultant dry waste is removed via either an electrostatic precipitator (ESP) or a fabric filter baghouse**.
- It offers various advantages in comparison to traditional acid gas scrubber technology such as: lower capital cost, wide range of favourable operation conditions, and much lesser time for completing installation and commissioning.

Sources of SO₂

- **Anthropogenic**-Burning of fossil fuels such as coal, oil and natural gas.
- **Natural**- **Volcanic eruptions, hot springs**, it can even be produced by the **reaction of hydrogen sulphide** with the oxygen in the air. (Hydrogen sulphide is released from **marshes and regions in which biological decay** is taking place.)

6.7. ARTIFICIAL LEAF TO REDUCE CARBON FOOTPRINT

Why in news?

Indian Institute of Sciences' researchers has developed an **artificial leaf** recently.

About Artificial Leaf or Quantum Leaf

- It will help in reducing carbon footprint as it absorbs carbon dioxide in the atmosphere to generate fuel and oxygen in the process, simulating the process of photosynthesis.
- While most plants **convert less than one per cent** of the available solar energy into chemical energy, the leaf can **convert about 20 per cent of the incident solar energy into chemical energy**. Also, it is **100 times more efficient than a natural leaf** in absorbing carbon dioxide during the process.
- It is composed of **completely biocompatible, earth abundant, semiconductor nano crystals** called **Quantum dots** which act as catalyst to convert absorbed **CO₂ into bicarbonate and then 'formate'** (derivative of formic acid) that can be used as **bio fuel**.
- It uses copper aluminium sulphate and zinc sulphide as semiconductors.
- It can act as a **source of renewable energy**, while **significantly reducing the carbon footprint from the atmosphere, releasing more oxygen in the process**. Hence the development is being viewed as **one of potential solutions in tackling global warming and climate change**.
- The bio fuel generated is not only **100% combustible** but the **carbon dioxide emitted** in the combustion of the fuel can be **recycled by the quantum leaves** too.

Quantum Dot:

- It is a **semiconductor nano crystal** which is **made of specific materials**.
- It has a discrete quantized energy spectrum.
- It contains a small finite number of **conduction band electrons, valence band holes, or excitons**.
- They are typically between **10 and 50 nm in size**
- They glow a particular color after being illuminated by light.
- The color they glow depends on the size of the nanoparticle. The smaller the nanoparticle, the higher the energy difference between valence band and conduction band, which results in a deeper blue color. For a larger nanoparticle, the energy difference is lower, which shifts the glow toward red.
- It has many **applications** in several areas such as **solar cells, transistors, LEDs, medical imaging and quantum computing**.

6.8. PLAN TO PREVENT ASTEROID ATTACK

Why in news?

NASA has released a document, titled "National Near-Earth Object Preparedness Strategy and Action Plan".

More on news

- It is a 10-year plan which will enhance NEO Detection, Tracking, and Characterization Capabilities and develop Technologies for NEO Deflection and Disruption Missions.
- It also calls for increased international cooperation to prepare for potential global impact threats.
- It shall work to strengthen U.S. emergency procedures and protocols, familiarizing state and local management personnel with the unusual nature of the threat.
- NASA's catalogue contains over 18000 NEOs with 8000 NEOs as **>140m wide**, the size at which mass casualties would occur. NASA has documented roughly 96% of the objects large enough to cause a global catastrophe.
- An asteroid or comet collision is a **"low probability but high consequence"** event as larger objects offer the world years of notice about when an orbit would intercept Earth. 40 m is about the average size an object must be to make it through the atmosphere without burning up.
- Double Asteroid Redirection Test (**DART**) mission will be the most prominent demonstration of the kinetic impact technique to change the motion of an asteroid in space. Its primary objective is to demonstrate it on small binary near-Earth asteroid (65803) called Didymos
- NASA is a key member in both the International Asteroid Warning Network (**IAWN**) and the asteroid Space Mission Planning and Advisory Group, endorsed by the UN Committee on the Peaceful Uses of Outer Space (**UN-COPUOS**) as the combined response for all space-capable nations to address the NEO impact hazard.

Related terms

- **Comet** is a small, icy object that orbits the sun and has a long "tail" of gas.
- **Asteroids** are rocks whose orbits lie mostly between Jupiter and Mars.
- **Meteors** are streak of light seen when a space rock enters earth's atmosphere and starts burning.
- **Meteorites** are those meteors which don't entirely burn and hence hit the earth.

- **IAWN** was established (2013) to create an international group of organizations involved in detecting, tracking, and characterizing NEOs
- The **UN-COPUOS** was set up by the General Assembly in 1959 to govern the exploration and use of space for the benefit of all humanity: for peace, security and development.

6.9. EXOPLANET DISCOVERED BY INDIA

Why in news?

Recently Indian scientists discovered a sub-Saturn or super-Neptune sized exoplanet.

More about the news

- The discovery was made by measuring the mass of the planet using the indigenously designed PARAS (PRL Advance Radial-velocity Abu-Sky Search) spectrograph integrated with a 1.2m telescope at Gurushikar Observatory in Mount Abu.
- The name of the host star is EPIC 211945201 or K2-236 and the planet will be known as EPIC 211945201b or K2-236b.
- It put India into a select league of countries which has discovered planets around stars.
- The discovery is of importance for understanding the formation of such super-Neptune or sub-Saturn planets that are closer to the host star.

About Exoplanet

- An exoplanet or extrasolar planet is a planet outside our solar system around a different host star than sun.
- Since 1988 more than 3500 exoplanets have been discovered across 2600 planetary systems.
- Of the 3500, some are ice giants, some are gas giants and some are super Earths.
- Some of the exoplanetary system are Trappist-1 planetary system, Kepler-11 planetary system, TrES-4.
- Kepler 90 is the first star system to have as many planets as our solar system.

Spectrograph: It is an instrument that separates light into a frequency spectrum and records the signal using a camera.

6.10. INDIA'S FIRST ROBOTIC TELESCOPE

Why in news?

Recently, India's first robotic telescope – Global Relay of Observatories Watching Transients Happen (GROWTH)-India, began its operation at the Indian Astronomical Observatory (IAO) in Hanule in Ladakh.

GROWTH-India

- It is a **fully robotic telescope** which has been funded by the Science and Engineering Board (SERB) of the Department of Science and Technology.
- It is a 70cm telescope and the primary objective of the project is the **time domain astronomy**.
- It is mostly an **imaging telescope** and the **spectroscopy** (analysis) will happen at Himalayan Chandra Telescope (HCT).
- It will be **remotely operated** from IIA's Centre for Research and Education in Science and Technology near Bangalore. The facility also houses the control room for remote operations of the Himalayan Chandra Telescope and is the data hub of the telescope.
- The first targets for the telescope were chosen from the **Messier catalogue** (a catalogue of nearby, bright astronomical sources accessible from the northern hemisphere) which allowed various image quality tests.

About GROWTH Initiative

- It is a part of **multi-country collaborative** initiative known as Global Relay Observatories Watching Transients Happen (GROWTH) to observe transient events in the universe.
- The initiative will focus on **three scientific themes** in the field of time-domain astronomy – cosmic explosions (supernova), small near-earth asteroids and the electromagnetic identification of gravitational wave sources.
- It is a fully robotic optical research telescope which has been designed to capture cosmic events occurring in timescales much shorter than light years like years, days and even hours.
- United States of America, United Kingdom, Japan, Germany, India, Taiwan and Israel are part of the initiatives.

What are transient events?

- These are short lived burst of energy in a system caused by a sudden change of state.
- The events are caused due to several factors such as relatively benign flares of stars, accretion of matter on compact objects, stellar merger and explosions.
- All these result in a flash in the sky for a period and then slowly fade away.
- Through these electromagnetic signatures, astronomers try to gain an insight into the cosmic objects as well as physical processes that govern their evolution.

What is Time Domain Astronomy?

It is the study of how astronomical objects change with time. Changes may be due to movement or physical changes in the object itself. Examples include pulsar variability, and the variability of accreting black holes, variable stars, and the Sun.

Himalayan Chandra Telescope

- It is a 2-m Telescope at IAO, Hanule, Ladakh.
- It is remotely operated using dedicated satellite communication link from the Centre of Research & Education in Science and Technology.

6.11. ROBINSECTS

Why in News?

Scientist has developed robots for pollination; called as Robinsects or Nova-Crafters, based on the concept of 'Biomimetics'.

More on News

- Colony collapse disorder and decreasing number of pollinators such as insects, birds, wasps etc. are threatening world food security, and biodiversity.

Biomimetics: Biomimetics, also known as bionics, biognosis, or biomimicry, is the use and implementation of concepts and principles from nature to creating new materials, devices and systems.

About the Robinsects

- Robinsects/Nova-Crafeters are GPS and Artificial Intelligence enabled small robotics hovers/drones which are programmed to carry out the pollination.
- Algorithms are being developed to help the robot locate flowers, and its robotic arm, topped with a set of soft brush tips—designed to act like a bee’s hairs—will gently reach out to each flower and pollinate it.

Colony collapse disorder- It is the phenomenon that occurs when the majority of worker bees in a colony disappear and leave behind a queen, plenty of food and a few nurse bees to care for the remaining immature bees and the queen.

Reason for decreasing pollinators- Inappropriate use of herbicide, pesticides, spreading of non-native species and disease, electromagnetic radiation from mobile tower and climate change.

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7. SOCIAL

7.1. NON-COMMUNICABLE DISEASES

Why in news?

Recently **Report of World Health Organization's (WHO) Independent High-Level Commission on non-communicable diseases (NCD) titled "Time to deliver"** has been released.

Findings of the report

- NCDs and mental disorders currently pose one of the biggest threats to health and development globally, particularly in the developing world. The risk of dying prematurely from an NCD in a **low or lower-middle income country is almost double that in high-income country.**
- NCDs affect the people around the world at **all stages of the life course, from childhood to old age.** Obesity, including in children, is increasing in all countries, with the most rapid rises occurring in low- and middle-income countries.
- **Most of the premature death is due to four NCDs** —cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes. Many other NCDs, such as neurological, skin, genetic disorders, disabilities etc., are closely associated with these four major NCDs.
- Although **the number of premature deaths has risen** in the years 2000 to 2015, **the probability of dying from any one of the four major NCDs is declining** due to
 - A growing younger population **aged 30 to 70 years.**
 - Falling mortality in two categories, **cardiovascular and chronic respiratory diseases.**
- The global rate of decline in NCDs death was 17% between 2000 and 2015. However it is **still not enough to meet the target of a one-third reduction in premature mortality from NCDs by 2030, as specified in SDG target 3.4.**
- There is increasing evidence about **the role of indoor and outdoor air pollution,** with its links to urbanization, in the development of NCDs.
- **Mental disorders:** Depression alone affects 300 million people globally and is the leading cause of disability worldwide. Nearly 800,000 people die from suicide every year. People with severe mental disorders have a **reduced life expectancy of 10 to 20 years,** largely owing to lack of treatment.

Steps taken globally

- **The Moscow Declaration** adopted during the First Global Ministerial Conference on Healthy Lifestyles and Non-communicable Disease Control in 2011 stressed on the need of a multi-sectoral approach.
- Member States of WHO have adopted and taken action on a number of interventions such as Global Action Plan for Prevention and Control of NCDs (2013-2020), the WHO Framework Convention on Tobacco Control, the Global Strategy on Diet Physical Activity and Health etc.
- **WHO's Comprehensive Mental Health Action Plan 2013-2020** to strengthen and integrate mental health prevention and prevention services.
- The **WHO Mental Health Atlas** to provide a comprehensive, longitudinal, monitoring of the mental health system performance.
- Adoption of an **Outcome Document at the UN General Assembly** in 2014, which included four time-bound commitments for implementation in 2015 and 2016. The commitments include setting national NCD targets, developing a national plan, reducing risk factors for NCDs and strengthening health systems to respond to NCDs.
- In 2015, a specific NCD target within **SDG target 3.4** was adopted which is a **one-third reduction of premature NCD mortality by 2030** through prevention and treatment of NCDs and the promotion of mental health and well-being.
- In 2017, **the Montevideo Roadmap 2018–2030 on NCDs** as a Sustainable Development Priority was adopted by Member States at the WHO Global Conference on NCDs.
- **25x25 strategy** where Member States agreed to a **25% reduction in premature NCD mortality by 2025.**

Challenges

- **Failure in converting their Commitments:** into legislative and regulatory measures sustained investments, or in financing for NCD programmes consistently. This will have enormous **health, economic, and societal consequences** in all countries.
- **Capacity building:** Many countries do not have the requisite technical expertise, resources, research capacity, and data to address NCD challenges

- **Mental disorders are too often not included in basic UHC packages:** It leads to an exceptionally large gap in treatment.
- **Ageing population:** The growing trend of population ageing has enormous ramifications for the prevention and management of NCDs.
- **Vicious cycle of poverty and NCDs:** NCDs and their risk factors worsen poverty, while poverty, isolation, marginalization, and discrimination contribute to rising rates of NCDs, poses a threat to public health and socio-economic development.
- **Other challenges:** Weak health systems, inadequate access, and lack of prevention and health promotion services and evidence-based interventions and medicines are other challenges to each country's path towards UHC in line with its national context and priorities.

Recommendations

- **Leadership and responsibility:** Heads of state and government and not just Ministers of Health should be involved in overseeing while political leaders at all levels should take responsibility for comprehensive local actions.
- **Prioritizing interventions:** within the overall NCD and mental health agenda, based on public health needs. For e.g. **comprehensive tobacco control**, comprehensive cardiovascular prevention and treatment programmes etc.
- **Re-orienting health systems:** to ensure that the national UHC public benefit package includes NCD and mental health services, strengthen primary health services to ensure suitable coverage and synergise existing chronic-care platforms to jumpstart NCD and mental health care.
- **Collaborate and regulate:** Governments should increase engagement with the private sector, academia, civil society, and communities, building on a whole-of-society approach to NCDs, and share experiences and challenges, including policy models that work.
- **Finance:** Governments and the international community should develop a new economic paradigm for funding action on NCDs and mental health. The percentage of national budgets allocated to health, health promotion, and essential public health functions should be increased.
- **Strengthen accountability of government to their citizens:** for action on NCDs. Also, WHO should simplify the existing NCD accountability mechanism and establish clear tracking for the highest impact programmes that can lead to achievement of SDG target 3.4.

7.2. NATIONAL HEALTH PROFILE-2018

Why in News?

Government has released the National Health Profile (NHP)-2018 and launched **National Health Resource Repository**.

About National Health Profile

- Objective of this annual publication is to **create a database of health information of India** which is comprehensive, up-to-date and easily accessible to all stakeholders in the healthcare sector.
- National Health Profile covers-
 - Demographic information,
 - Socio-economic information,
 - Health status
 - Health finance indicators,
 - Comprehensive information on health infrastructure and human resources in health.
- It is prepared by Central Bureau of Health Intelligence.
- Health Profile is an important tool as it has helped in designing various programmes and benefitted many initiatives like Free Drugs and Diagnostics and Mission Parivar Vikas.

Central Bureau of Health Intelligence (CBHI)

- It was established in 1961 and works as the **health intelligence wing** of the Directorate General of Health Services in the Ministry of Health & FW.
- Its vision is to have **"A strong Health Management Information System in entire country"**.

About National Health Resource Repository (NHRR)

- It is the **first ever registry in India** of authentic, standardised and updated geo-spatial data of **all public and private healthcare**.
- **ISRO is the project technology partner** for providing data security.
- It **aims to strengthen evidence-based decision making** and develop a platform for citizens and provider-centric services by secured **Information Technology (IT)-enabled** repository of India's healthcare resources.
- It seeks to promote meaningful use of data collection and exchange services for better healthcare management by providing a common platform for sharing information.
- It shall **enable advanced research** towards ongoing & forthcoming healthcare challenges arising from other determinants of health like – disease, environment etc.
- It shall also enhance the coordination between central and state government for optimization of health resources, and decentralize the decision making at district and state level.
- It shall promote convergence between similar programmes by providing interoperability.
- It also seeks to furnish standardized data, distribution of resources and trends on the global platform, using regularly updated health status indicators.

7.3. NUTRITION SECURITY

Why in news?

United Nation has published its report on "**The State of Food Security and Nutrition in the World**" for 2017.

Background

- This is an **annual report jointly prepared** by the Food and Agriculture Organization (FAO), the International Fund for Agricultural Development (IFAD), the United Nations Children's Fund (UNICEF), the World Food Programme (WFP) and the World Health Organization (WHO).
- UNICEF and WHO have joined for the first time.
- For the first time, this year's report provides two measures of food insecurity:
 - **prevalence of undernourishment (PoU)**,
 - **prevalence of severe food insecurity** based on **Food Insecurity Experience Scale (FIES)**. This is a new tool based on direct interviews to measure people's ability to access food.
- The report assesses the trends for **six nutrition indicators**, including three **SDG 2 indicators** of child malnutrition (stunting, wasting and overweight) and three **World Health Assembly (WHA)** indicators (Anaemia in women of reproductive age, exclusive breastfeeding in first 6 months and low birth weight) .
- The focus of this year's report is on the **nexus between SDG 2 and SDG 16** - that is, between conflict, food security and peace.
- The report shows how conflict affects food security and nutrition, and how improved food security and more-resilient rural livelihoods can prevent conflict and contribute to lasting peace.

Key messages of the report

- **Rise in undernourishment:** The number of chronically undernourished people in the world is estimated to have increased to 815 million in 2016 from 777 million in 2015. After a prolonged decline (900 million in 2000), this recent increase could signal a reversal of trends.
 - **Stunting:** Though there is fall in stunting, 155 million children under five years of age suffer from stunted growth globally.
 - **Wasting:** It affects one in twelve (52 million or 8%) of all children under five years of age in 2016, more than half of whom (27.6 million) live in Southern Asia.
- **Coexistence of multiple malnutrition:** under-nutrition among children, anaemia among women, and adult obesity have been found simultaneously.
 - In 2016, 41 million children under five years of age were overweight.
- **Areas affected:** Parts of sub-Saharan Africa, South-Eastern Asia and Western Asia is worst affected, and deterioration is observed in situations of conflict and conflict combined with droughts or floods/climate (due to El Nino and La Nina) related shocks.

- An estimated 489 million of 815 million undernourished people and an estimated 122 million of 155 million stunted children live in countries affected by conflict.
- Africa has the highest levels of severe food insecurity reaching 27.4 % of the population - almost four times that of any other region in 2016.
- In Asia, the prevalence of severe food insecurity decreased slightly between 2014 and 2016, from 7.7 to 7.0 % overall, driven mainly by the reduction observed in Central Asia and Southern Asia.
- The prevalence of food insecurity was slightly higher among women at the global level as well as in every region of the world.
- Addressing food insecurity and malnutrition in conflict-affected situations requires immediate humanitarian assistance, long-term development and sustaining peace.

How does Conflict affect food security and nutrition?

- Conflict can cause deep economic recessions, drive up inflation, disrupt employment and erode finances for social protection and health care, to the detriment of the availability and access of food in markets and so damaging health and nutrition.
- The impact on food systems can be severe if the economy and people's livelihoods rely significantly on agriculture, as the effects can be felt across the food- value chain, including production, harvesting, processing, transportation, financing and marketing.
- Conflict undermines resilience and often forces individuals and households to engage in increasingly destructive and irreversible coping strategies that threaten their future livelihoods, food security and nutrition.

Can food insecurity and under-nutrition trigger conflict?

- According to WFP, undernourishment is one of the important determinants of the incidences of armed conflict, and that when coupled with poverty, food insecurity increases the likelihood and intensity of armed conflict.
- In countries with low socio-economic indicators - such as higher rates of child mortality, poverty, food insecurity and undernutrition - there is a higher risk of conflict.
- **Sharp increase in food prices tend to exacerbate the risk of political unrest and conflict, as witnessed between 2007-08 and 2011 when food riots broke out in more than 40 countries (Arab Spring).**
- A severe drought tends to threaten local food security and aggravate humanitarian conditions, which in turn can trigger large-scale human displacement and create a breeding ground for igniting or prolonging conflicts as seen in Syrian civil war.
- Competition for natural resources can be detrimental to the food security of vulnerable rural households, potentially culminating in conflict as seen in Darfur and in greater horn of Africa.

UN's assessment of India between 2014-16

- 14.5% of the total population is undernourished
- 21.5% Children under five suffer from wasting in 2016.
- 38.5% children under five are stunted
- 51.4% women of reproductive age are anaemic
- Obesity among adults has reached 3.6% and is increasing.
- Exclusive breastfeeding has increased rapidly and around 64.9% children are exclusively breast fed for first six months.

Reasons behind such a scenario:

- Insufficient intake of both macro and micro-nutrients cause malnourishment. Since food security in India is primarily focussed on providing rice and wheat only, the diet lacks other essential nutrients and results into stunting etc.
- Only 17% children achieved a minimum level of diet diversity.
- Acute food insecurity in tribal and rural households is due to a loss of their traditional dependence on forest livelihood and the State's deepening agrarian crisis.
- Systemic issues and a weaknesses in public nutrition programmes have aggravated the problem e.g. many of the tribal families do not receive rations (through public distribution system) because they do not have a ration card.
- The nutrition expenditure as a percentage of the Budget has drastically declined in many states.

Gender dimensions involved in food security and nutrition in conflict zones

- Men and women often have different roles and responsibilities in securing adequate food and nutrition at the household level. **Conflicts tend to alter gender roles and social norms.**
- The engagement of men in conflict **puts greater responsibility in the hands of women** in sustaining the livelihood of the household, including for the access to food, nutrition and health care of household members.
- Conflict situations often are characterized by **increased sexual violence, mostly targeted at women.**

- In crisis situations and among refugees, one in every five women of childbearing age is likely to be pregnant. Conflicts **put these women and their babies at increased risk** if health-care systems falter and their food security situation deteriorates.
- Rural women often have **less access to resources and income**, which makes them more vulnerable and hence more likely to resort to riskier coping strategies which may affect their health and eventually of entire household.
- Conflict leads to **increased female labour participation** particularly in low skilled work which may expose them to unsafe and insecure labour conditions.
- **Child labour** in its worst forms are seen during times of conflict.
- Shifting gender roles can also have **beneficial effects on household welfare**. Where women gain more control of resources, household food consumption tends to increase and child nutrition improve. Their economic empowerment may further give them greater voice in household and community decision-making as seen in Somalia, Colombia, Nepal etc.

Way-forward

- Prevent conflict through addressing its root and immediate causes such as economic exclusion, extractive or predatory institutions, inequitable social services, access to and use of natural resources, food insecurity, and climatic disasters.
- Timely intervention by government and humanitarian organisations.
- Scaling up social protection, Cash-for-work and food-for-assets programmes, creating or rehabilitating critical productive infrastructure, such as roads or irrigation systems.
- Farmers displaced by conflict can be trained in new livelihood skills, with which they can earn an income in camp settings.
- In pastoralist regions, watering points can be built in safe areas to avoid the risk of leading livestock into conflict zones.
- Support can be provided to internally displaced people, refugees and ex-combatants for returning home and resuming productive activities, for example, by providing seeds, tools, livestock, or skills training.

7.4. WHO RELEASES NEW GLOBAL CLASSIFICATION OF DISEASES

Why in News?

Recently, World Health Organisation (WHO) released its **11th edition of International Classification of Diseases (ICD- 11)**.

About ICD

- The **International Classification of Diseases (ICD)** is a common language used all over the world by researchers and policy makers as a reference for data, whereas doctors and other medical practitioners use it to diagnose disease and other conditions.
- The ICD serves as a foundation for identifying global health trends and is used by health insurers whose reimbursements depend on ICD coding.

Significant features of ICD- 11

- **It is an advance preview** to allow countries to plan how to use the new revision, prepare translations, and train health professionals. The new ICD will be presented at the **World Health Assembly** in May 2019 for adoption by member states and will go into effect from January 2022.

About Global Antimicrobial Resistance Surveillance System (GLASS)

- Launched in October 2015, it is being developed to support the global action plan on antimicrobial resistance.
- It is aimed at **supporting global surveillance and research** in order to strengthen the evidence base on **antimicrobial resistance (AMR)** and help informed decision-making and drive national, regional, and global actions.
- It promotes and supports a **standardized approach to the collection, analysis and sharing of AMR data at a global level** by encouraging and facilitating the establishment of **national AMR surveillance systems** that are capable of monitoring AMR trends and producing reliable and comparable data.
- **Objectives of GLASS:**
 - Foster national surveillance systems and harmonized global standards;
 - estimate the extent and burden of AMR globally by selected indicators;
 - analyse and report global data on AMR on a regular basis;
 - detect emerging resistance and its international spread;
 - inform implementation of targeted prevention and control programmes; and
 - assess the impact of interventions.

- **Includes more codes:** The new edition carries about 55,000 codes for injuries, diseases and causes of death, more than the 10th edition that had 14,400 codes.
- **More closely reflects the progress in medicine and advances in scientific understanding:** the codes relating to antimicrobial resistance in the new ICD are more closely aligned with the **Global Antimicrobial Resistance Surveillance System (GLASS) (box)**.
- **Better captures data** regarding healthcare safety, meaning it will help identify and reduce unnecessary events that may harm health, including unsafe workflows in hospitals. It also uses for the first time an **electronic and user friendly format**.
- **Inclusion of new chapters, including ones on traditional medicine and sexual health.** While traditional medicine has not been classified in this system until now, the chapter on sexual health brings together conditions that were previously categorized in other ways (for instance gender incongruence was earlier listed under mental health condition).
- **Gaming Disorder:** The WHO also added **gaming disorder** to the section on addictive disorders. Gaming addiction pushes all other activities to the periphery affecting personal, familial, social, educational and occupational functioning and can lead to disturbed sleep patterns, diet problems and lack of physical activities.

7.5. DRAFT HIGHER EDUCATION COMMISSION OF INDIA (HECI) BILL, 2018

















Why in news?

The Ministry of Human Resource and Development (MHRD) has prepared a **HECI (Repeal of University Grants Commission Act) Bill 2018** and has placed it in public domain for comments and suggestions.

Challenges in Higher Education in India

- **Enrolment:** The Gross Enrolment Ratio (GER) of India in higher education is only 25.2% which is quite low as compared to the developed as well as, other developing countries. With the increase of enrolments at school level, the supply of higher education institutes is insufficient to meet the growing demand in the country.
- **Equity:** According to various studies the GER in higher education in India among male and female varies to a greater extent and there are regional variations too.
- **Quality:** Still Large number of colleges and universities in India are unable to meet the minimum requirements laid down by the UGC and our universities are not in a position to mark its place among the top universities of the world.
- **Faculty:** Faculty shortages and the inability of the state educational system to attract and retain well qualified teachers have been posing challenges to quality education for many years. There are 40 per cent vacancies of faculty members in central universities.
- **Infrastructure:** Poor infrastructure is another challenge to the higher education system of India particularly the institutes run by the public sector.
- **Political interference:** Most of the educational Institutions are owned by the political leaders, who are playing key role in governing bodies of the Universities.
- **Structure of higher education:** Management of the Indian education faces challenges of overcentralisation, bureaucratic structures and lack of accountability, transparency, and professionalism.
- **Regulation issues:** The existing regulatory structure (represented by UGC) requires redefinition based on changing priorities of higher education.
 - Multiple regulatory bodies such as UGC, AICTE, MCI etc with overlapping jurisdiction and grey areas exist.
 - Regulatory and grants/funds-giving roles are mixed up.
 - Excessive and restrictive regulation and lack of institutional autonomy exist.
 - To enhance quality of education in higher educational institutions and for its uniform development, there is a need for creation of a Body that lays down uniform standards, and ensures maintenance of the same through systematic monitoring and promotion

PROPOSED CHANGES

UGC Act	HECI Bill
 <p>UGC will have chairman, vice-chairman, secretary, 10 other members</p>	 <p>HECI will have chairman, vice-chairman, secretary, 12 other members</p>
 <p>No provision for govt to remove chairman, vice-chairman, members</p>	 <p>Govt can remove chairman, vice-chairman, member for nine reasons</p>
 <p>UGC to disburse grants to universities</p>	 <p>HECI not responsible for disbursing grants to universities; this function will be discharged by HRD Ministry</p>
 <p>Can withhold grants of an institution that doesn't comply with its directions and standard</p>	 <p>Can revoke approval of an institution for not complying with its standards</p>
 <p>Retirement age of chairman, vice-chairman fixed at 65 yrs</p>	 <p>Retirement age of chairman, vice-chairman fixed at 70 yrs</p>
 <p>Chairman, vice-chairman, members can accept job offers from higher education institutions run by Center, state, private bodies</p>	 <p>Two-year cooling-off period for chairman, vice-chairman, members</p>
 <p>No provision for online application</p>	 <p>Only online applications for HECI's approval</p>
 <p>No provision for an advisory council</p>	 <p>Will have an advisory council chaired by HRD Minister</p>

Arguments in favour of the bill

- The fund-granting process of the UGC and the technical education regulator — All India Council for Technical Education (AICTE) — has been plagued with **allegations of corruption and inefficiency**.
- The **separation of grant functions** will help HECI to focus only on academic matters.
- UGC has been criticised in the past, especially for what has been seen as its restrictive regime. The Professor Yash Pal committee and Hari Gautam committee recommended an education regulator to rid the higher education sector of red tape.
- HECI **could mark the end of "Inspection Raj"**. HECI will specify norms and standards to establish, commence or wind up academic operations of an HEI using an online e-governance module. The effectivity of the body will increase through transparent public disclosures, merit-based decision making on matters regarding standards and quality in higher education.
- **The power to ensure compliance** will help in improving standards/quality of the higher educational institutions (HEI).
- The advisory council with the head of all state councils for higher education as its members would also **provide larger opportunity to States** which so far had a negligible role in the formulation of higher education policy.
- Encouraging HEIs to establish code of good practices covering promotion of research, teaching and learning is futuristic.

Criticism against the bill

- Since UGC has been established through an Act of Parliament, it should have been **discussed within the parliament** and with the academicians on how to improve it first, before deciding upon its replacement.
- Transferring all financial powers from the UGC to the MHRD would amount to **imposing direct state control** over higher education institutions. This shift in financial control to the Ministry could be used for regimentation of knowledge.

- The bill talks about promoting autonomy. Several institutions have opposed autonomy as it is a **route towards commercialisation and increased marginalisation** or complete exclusion of students from socially oppressed and economically weaker sections.
- The powers to authorise, monitor, shut down, lay down norms for graded autonomy or standards for performance-based incentivisation, and even recommend disinvestment from higher education institutions have been made **unilateral and absolute**.
- With its mandate of improving academic standards with a specific focus on learning outcomes, evaluation of academic performance by institutions, and training of teachers, the HECI is likely to **overregulate and micromanage universities**.
- The proposed draft has drastically **reduced the presence of teachers in the body**. UGC has 4 teacher members out of total 10 members, while the HECI has only 2 teacher members out of total 12 members.

7.6. INDECENT REPRESENTATION OF WOMEN (PROHIBITION) ACT (IRWA), 1986

Why in news?

Recently, **Ministry of Women and Child Development** has proposed amendments in IRWA.

Background

- Government enacted the **Indecent Representation of Women (Prohibition) Act (IRWA), 1986** to prohibit indecent representation of women through **advertisements, publications, writings, paintings, figures or in any other manner**, in response to the demand by the women's movement for a legislative action against the derogatory depiction of women in India.
- Under the Act, the term **"indecent representation"** has been defined in **Section 2(c)** as the depiction in any manner of the figure of a woman, her form or body or any part thereof in such a way as to have the effect of being indecent, or derogatory to, denigrating, women, or is likely to deprave, corrupt or injure the public morality or morals.
- Since then, technological revolution has resulted in the development of new forms of communication, such as internet, multi-media messaging, cable television, over-the-top (OTT) services and applications e.g. Skype, Viber, WhatsApp, Chat On, Snapchat, Instagram etc.
- Hence, the **Indecent Representation of Women (Prohibition) Amendment Bill, 2012** was introduced in Rajya Sabha in December, 2012 which referred the Bill to Department related Parliament Standing Committee for consideration.

Amendments Proposed

The amendments proposed based on the observations made by **Parliamentary standing committee on Human Resource Development** and recommendations from the **National Commission for Women (NCW)** are:

- **Widening the definition** of following terms:
 - **Advertisement** to include digital form or electronic form or hoardings, or through SMS, MMS etc.
 - **Indecent representation of women** to mean the depiction of the figure or form of a woman in such a way that it has the effect of being indecent or derogatory or is likely to deprave or affect public morality.
 - **Electronic form** means any information generated, sent or stored in media, magnetic and optical form (as defined in the Information Technology Act, 2000).
 - **Publish** includes printing or distributing or broadcasting through audio visual media.
 - **Distribution** to include publication, license or uploading using computer resource, or communication device.
- **Expands section 4 of the Act** to include that No person shall **publish or distribute or cause to be published or cause to be distributed by "any means any material"** which contains indecent representation of women in any form.
- **Penalty** similar to that provided under the **Information Technology Act, 2000**: Sections 67 and 67A of the IT Act lay down a punishment of three to five years for circulating obscene material and five to seven years for circulating sexually explicit material, respectively.

- **Creation of a Centralised Authority** under the aegis of **National Commission of Women (NCW)** which is to be headed by Member Secretary, NCW, having representatives from Advertising Standards Council of India, Press Council of India, Ministry of Information and Broadcasting and one member having experience of working on women issues.
 - **Its function** will be to receive complaints or grievances regarding any programme or advertisement broadcasted or publication and investigate/examine all matters relating to the indecent representation of women.

Significance

- **Widens the scope of the Act** to cover new forms of communication such as the internet, satellite based communication, cable television etc which remained outside the application of 1986 Act which focused primarily on print media and advertising.
- **Reduce the complexity in application of the laws** as the Amendment seeks to align the act on the lines of Information Technology Act, 2000.
- **Counter the rising menace of “Revenge Porn”**: The proposed amendment is a gender-specific statute and thus, is likely to be an enabling provision for countering the presence of such non-consensual material over the web.

Concerns

- The term “indecent representation” continues to be **defined in a vague manner**, leaving the same open to misinterpretation.
- When the **standard of derogatory portrayal is not categorically defined**, there is always a possibility of the same being interpreted on the benchmark of an **orthodox morality**. For instance the case of **Central Board of Film Certification (CBFC)** controversy in film certification in recent past.
- This may **encourage moral policing of women’s bodies** to the extent that any content involving “nudity” would be disallowed or banned, irrespective of the purpose behind its publication, like the **Breast Cancer Awareness Video** which was banned by Facebook, though it later issued an apology for the same. Also recently, a Kerala magazine showed a model breastfeeding a child on cover page was trying to convey a **cause for breastfeeding in public**, however, a case was filed under section 4 of the Act against the magazine.
- **Conflict with Freedom of expression (Article 19(1)(a))** In **Ajay Goswami v. Union of India (2007)**, while examining the scope of **Section 292 of IPC and Sections 3, 4 and 6 of the Indecent Representation of Women (Prohibition) Act, 1986**, the Supreme Court held that the commitment to freedom of expression demands that it cannot be suppressed, unless the situations created by it allowing the freedom are pressing and the community interest is endangered.

Way forward

- Unless a standard is set to determine exactly what the legislation attempts to penalise, the regulatory framework proposed to be enforced may remain hollow to a certain extent.
- The Government should regularly conduct **awareness generation programmes** and publicity campaigns on various laws relating to women including the Indecent Representation of Women (Prohibition) Act, 1986 through workshops, fairs, cultural programmes, seminars, training programmes, etc.
- Further, advertisements must regularly be brought out in the print and electronic media to create awareness on laws relating to rights of women.

7.7. WOMEN IN PRISONS

Why in news?

The Ministry of Women and Child Development (MWCD) has published its report titled ‘Women in Prisons.’

Condition of women prisoners in India (based on 2015 data):

- There are approximately 4.2 Lakh persons in jail in India, of which, around 18000 (**about 4.3%**) are women. Of these, around 12000 (**66.8%**) are **undertrial prisoners**.
- The number of women prisoners is showing an **increasing trend** - from 3.3% of all prisoners in 2000 to 4.3% in 2015.

- About 50% of these women are in age group of 30-50 years and the next **31% are in age group of 18-30 years**.
- There are 1,401 prisons in India, and **only 18 are exclusive for women** which can house just around 3000 female prisoners. Thus, a majority of women inmates are housed in **women's enclosures of general prisons**.

Problems faced by women prisoners

- Women are often confined to **small wards inside male prisons**, their needs becoming secondary to those of the general inmate population.
- While several cases of sexual harassment, violence and abuse against women in jails have been observed, the **grievance redressal mechanism** is still weak.
- There is **inadequacy of female staff** which often translates to the reality that male staff becomes responsible for female inmates, which is very much undesirable.
- Their small numbers (4.3%) ensure they remain **low on policy priority** and hence the coverage of facilities such as sanitary napkins, pre- and post-natal care for pregnant mothers is patchy.
- They are not provided with **meals** that are nutritious and according to their bodily requirements.
- Women tend to **lose ties with their children** over the years, due to inadequate child custody procedures (children upto 6 years are allowed in jail with their mothers, after that they are sent away to children home).
- They are abandoned or harassed **post-release**, mainly due to the stigma attached with incarceration.

Details and recommendations of the report

- **Care-giving mothers:**
 - They should be allowed to make arrangements for their children prior to their imprisonment
 - They should be allowed reasonable suspension of detention.
 - If there is no relative/friend, her child below 6 years should be put in a child care institution.
 - Extended visits and frequent meetings should be allowed with the child.
- **Undertrial women:**
 - Bail should be granted to those who have spent one-third of their maximum possible sentence in detention by amending section 436A of CrPC.
 - A maximum time frame may be decided for release of women prisoners after bail is granted but surety is not produced.
- **Post-natal stage women:**
 - A separate accommodation should be provided to them to maintain hygiene and protect the infant from contagion, for at least a year after childbirth.
 - Special provisions related to health and nutrition of such women be made.
 - Instruments of restraint, punishment by close confinement or disciplinary segregation should never be used on pregnant and lactating women.
- **Pregnant women:**
 - They must be given information and access to abortion during incarceration, to the extent permissible by law.

The International Norms:

UN BANGKOK RULES on women offenders and prisoners:

Adopted in 2010, these rules talk about appropriate healthcare to women, treating them with humanity and preserving their dignity during searches, protecting them from violence and provide for the children of the prisoners.

International Covenant on Civil and Political Rights (ICCPR) is the core international treaty on the protection of the rights of prisoners. India ratified the Covenant in 1979 and is bound to incorporate its provisions into domestic law and state practice.

International Covenant on Economic, Social and Cultural Rights (ICESR) states that prisoners have a right to the highest attainable standard of physical and mental health.

The UN standard Minimum Rule presents most comprehensive guidelines regarding prisoners and was adopted by UN Economic and Social Council (ECOSOC) in 1957.

Other Steps taken for women prisoners

Model Prison Manual, 2016

- The manual contains additional provisions for Women prisoners and their children as well.
- These provisions are based on **UN Bangkok Rules** and is drafted by the Bureau of Police Research and Development (BPR&D),
- The manual calls for women doctors, superintendents, separate kitchens for women inmates, and pre- and post-natal care for pregnant inmates, as also temporary release for an impending delivery.
- It also talk about ensuring creche and nursery schools for the children to be looked after.

Swadhar Greh:

This is a scheme for rehabilitation of women victims of difficult circumstances. Among other beneficiaries, the scheme also includes women prisoners released from jail and are without family, social and economic support.

- **Women with sensory disabilities or those with language barriers:**
 - Legal consultations must be conducted in confidentiality and without censorship.
 - Adequate arrangements must be made by the prison administration to ensure that such persons do not face any disadvantage by providing an independent interpreter
- **For grievance redressal:**
 - Apart from the prisoner herself, her legal adviser or family members should be allowed to make complaints regarding her stay in prison.
 - An inmate register can also be placed at an accessible spot in the prison for submitting grievances.
 - All official visitors must hold special one-on-one interviews with prisoners away from prison authorities during inspection visits.
- **For mental needs:**
 - They should be given access to female counsellors/psychologists at least on a weekly basis or as frequently as needed by them.
- **For re-integration of women in society:**
 - A comprehensive after-care programme should be put in place, covering employment, financial support, regaining of child custody, shelter, counselling, continuity of health care services etc.
 - Counselling should also be provided to family members and employers to adequately receive the woman after release
 - Prison authorities should coordinate with local police to ensure released prisoners are not harassed by them due to the attached stigma
 - At least one voluntary organisation should be designated in each district to help with integration of released prisoners.
- Prisoners must be given the **right to vote**.

7.8. DISHA DASHBOARD

Why in news?

Ministry of Rural Development recently launched the **DISHA dashboard**.

Features

- It has been developed to facilitate data driven decision making.
- Currently, 18 schemes are covered; the ultimate plan is to integrate all 42 Central schemes which are already monitored by DISHA or District Development Coordination and Monitoring Committees.
- Currently, the tool is available to legislators and government officials, but soon some of its features will be available online to the public.
- It will make it easier to monitor governance by geography in real time and overcome geographic mismatches.

District Development and Monitoring Committees/DISHA

- These are constituted by the union government **to ensure a better coordination among all the elected representatives** in Parliament, State Legislatures and Local Governments (Panchayati Raj Institutions/ Municipal Bodies) for efficient and time-bound development of districts.
- These committees would **monitor the implementation of schemes and programmes** of Ministry of Rural Development and other Ministries to promote synergy and convergence for greater impact.
- The **Chairperson of the committee** will be the senior most Member of Parliament (Lok Sabha) elected from the district, nominated by the Union Ministry of Rural Development.
- The other Members of Parliament (Lok Sabha) representing the district will be designated as Co-Chairpersons.
- One MP (Rajya Sabha) representing the State and exercising option to be associated with the district level Committee of that district (on first come basis) will be designated as Co-Chairperson.
- The committee will include various other members such as: All Members of the State Legislative Assembly elected from the district, All Mayors / the Chairpersons of Municipalities, chairperson of the Zilla Panchayat etc.
- Five elected heads of Gram Panchayat including two women, One representative each of SC, ST and Women to be nominated by the Chairperson will be among other members of the committee.
- The Member Secretary of DISHA should be the District Collector / District Magistrate/ Deputy Commissioner except in cases where specific exemption has been given by the Union Government.

7.9. GLOBAL ACTION PLAN ON PHYSICAL ACTIVITY 2018-2030

Why in News?

Recently, World Health Organisation released Global Action Plan on Physical Activities 2018-2030.

About the Action Plan

- It recommends a set of policy areas, for improving the environments and opportunities for people of all ages and abilities to do more walking, cycling, sport, active recreation, dance and play.
- Plan target- 15% relative reduction in the global prevalence of physical inactivity in adults and in adolescents by 2030.
- Increasing inactivity is linked to various Non-Communicable Diseases (such as heart disease, stroke, diabetes, cancer and obesity) which in turn are responsible for a high number of premature deaths all over the world. It is estimated that inactivity itself kills more than 5 million per year and is as dangerous as smoking.
- This global action plan sets out four strategic objectives achievable through 20 policy actions that are universally applicable to all countries viz, Create active society, create active environment, Create Active People, and Create active System.
- The framework consists of policy actions aimed at improving the social, cultural, economic, environmental factors and enhance individual education and information respectively.

Physical Activity

- It is defined as any bodily movement produced by skeletal muscles that requires energy expenditure (**World Health Organisation**).
- It includes exercise as well as other activities which involve bodily movement and are done as part of playing, working, active transportation, house chores and recreational activities.

Related Sustainable Development Goals SGDs

Investing in policies to promote physical activities can contribute directly to achieving many of the 2030 SDGs as follows-

- SDG2: Ending all forms of malnutrition.
- SDG3: Good Health and well-being.
- SDG8: Decent work and economic growth

Important Recommendations

Certain important ones among various recommendations by the Plan are-

- **Implement best practice communication campaigns and community-based campaigns**, linked with community-based programmes, to heighten awareness, knowledge and understanding of, and appreciation for, the multiple health benefits of regular physical activity.
- **Implement regular mass-participation initiatives in public spaces**, engaging whole communities, to provide free access to enjoyable and affordable, socially and culturally appropriate experiences of physical activity.
- **Strengthen Urban and Transport planning policies** that enable and promote walking, cycling, other forms of mobility involving the use of wheels (including wheelchairs, scooters and skates) and the use of public transport, in urban, peri-urban and rural communities.
- **Strengthen provision of good-quality physical education** and more positive experiences and opportunities for active recreation, sports and play for girls and boys, applying the principles of the whole-of-school approach to establish health and physical literacy, and promote the enjoyment of, and participation in, physical activity, according to capacity and ability.
- **Enhance provision of more physical activity** programmes and promotion in parks and other natural environments as well as in private and public workplaces, to support participation in physical activity, by all people of diverse abilities.
- **Strengthen the national and institutional research and evaluation capacity** and stimulate the application of digital technologies and innovation to accelerate the development and implementation of effective policy solutions aimed at increasing physical activity and reducing sedentary behaviour.
- **Strengthen financing mechanisms** to secure sustained implementation of national and subnational action and the development of the enabling systems that support the development and implementation of such policies.

7.10. HAPPY SCHOOLS PROJECT

Why in news?

Recently, Happy School Project was launched by UNESCO with the involvement of Mahatma Gandhi Institute of Education for Peace and Sustainable Development (MGIEPS) in India.

About the Project


- It was launched in 2014 with the aim of promoting learner well-being and holistic development in School.
- The framework of the Project aims to **bring happiness and the quality of education together** by calling for education systems to shift away from traditional measures and to instead embrace a diversity of talents and intelligences by recognizing values, strengths and competences that contribute to enhancing happiness.
- The Project framework consists of 22 criteria for a happy school under three categories – People, Place and Process.

Need for the project

- Over the decades the education system in India has become **stressful and competitive** for children. The **rote learning system** and the **objectivity of merit** and exam-oriented system is making children bogged down.
- There is a rising trend of **rising intolerance and violent extremism** as well as increasing level of anxiety and depressions which further aggravates and results into suicides in worst case scenario.

Mahatma Gandhi Institute of Education for Peace and Sustainable Development

- It is the first UNESCO specialized education institute in India, and the first Category 1 institute in the Asia-Pacific region.
- Its role will be to support member governments, provide advocacy, commission research and enhance capacity building.
- It will also act as a clearing house for Education for Sustainable Development (ESD) and Peace Education.



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8. CULTURE

8.1. VAKATAKA DYNASTY

Why in news?

- A team of archaeologists have confirmed that the Vakataka dynasty ruled from its capital Nandivardhan, or the present day Nagardhan
- It is a large village discovered near Ramtek taluka in Nagpur district.

About Vakataka Dynasty:

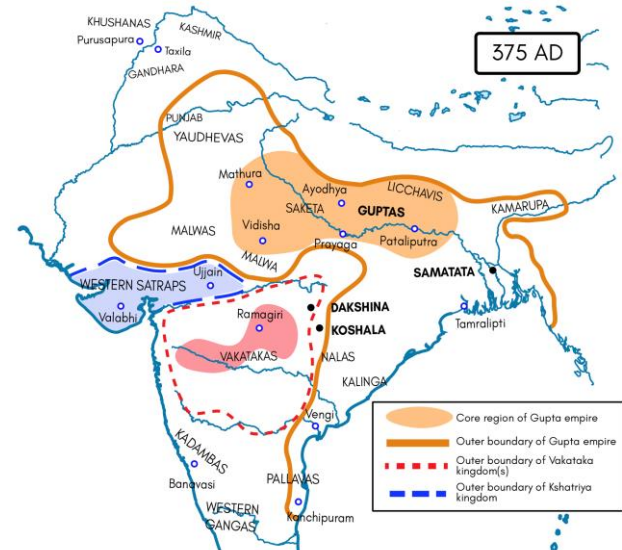
- The **Vakataka Empire** originated from the Deccan in the mid-3rd century CE.
- They were the most important **successors of the Satavahanas in the Deccan** and **contemporaneous with the Guptas** in northern India.
- The Vakataka dynasty was a **Brahmin dynasty**. Little is known about **Vindhyashakti**, the founder of the family.
- Territorial expansion began in the reign of his son **Pravarasena I**.
- The Vakatakas are noted for having been patrons of the arts, architecture and literature.
- The rock-cut Buddhist viharas and chaityas of Ajanta Caves (a UNESCO World Heritage Site) were built under the patronage of Vakataka emperor, Harishena.

Significance of this discovery

- Till now, researchers have only managed to get written inscriptions and copper plates, all featuring the Vataka king Prithvisena. It is the first traces sealing the fact that the king shifted his capital from Padmapura to Nandivardhan in Vidarbha.
- They have unearthed some vital signs and remains in the form of typical artefacts including ceramics, ear studs made of glass were excavated belonging to the period during the Vakataka rule.
- Terracotta objects depicting images of gods, animals, humans along with amulets, scotches, wheels, skin rubbers, spindle whorls were discovered.
- Some of the ceramics, according to the researchers, dates back to 3-4th century BCE.
- A near-intact clay sealing of the Vakataka empress Prabhavtigupta, the chief queen of the Vakataka king Rudrasena II has also been unearthed.

Approximate extent of the Vakataka territories in 375 CE.

APPROXIMATE EXTENT OF THE VAKATAKA TERRITORIES IN 375 CE



8.2. SAINT KABIR

Why in news?

PM offered floral tributes at Sant Kabir Samadhi, on the occasion of the 500th death anniversary of the great saint and poet, Kabir.

About Saint Kabir

- Kabir Das, a mystical poet and great Saint of India, was born in the year 1440 and died in the year 1518.

Nirguna bhakti and Saguna bhakti

- The nirguna bhaktas were devotees of a formless God even while calling him variously as Rama, Govinda, Hari or Raghunatha. The most conspicuous among them were Kabir and Nanak.
- The saguna bhaktas were devotees of god with attributes or in human form. Vishnu in its incarnations as Rama, or Krishna, are most popular deities that were worshipped by Saguna Bhakti saints.
- Thus, Saguna bhakti movement of North India was essentially vaishnavite in character as compared to Southern Bhakti movement which had both Vaishnav as well as Shaiv streams.

- He is the most important **Nirguna Bhakti saint**.
- Kabir's teachings were based on a complete, indeed vehement, rejection of the major religious traditions and vouched for Nirguna form of Bhakti.
- His teachings openly ridiculed all forms of external worship of both Brahmanical, Hinduism and Islam, the pre-eminence of the priestly classes and the caste system.
- It is considered that he got all his spiritual training from his Guru named, Ramananda, in his early childhood.
- **Kabir Panth** is the huge religious community which identifies the Kabir as the originator of the Sant Mat sects.
- Kabir Das is the first Indian saint who has coordinated the Hinduism and Islam by giving a universal path which could be followed by both Hindus and Muslims.
- According to him every life has relationship with two spiritual principles, Jivatma and Paramatma. His view about the moksha that, it is the process of uniting these two divine principles.
- Some of the great writings of the Kabir Das are Bijak, Kabir Granthawali, Anurag Sagar, Sakhi Granth etc.

8.3. BADSHAHI ASHOORKHANA

Why in news?

Telangana government and Aga Khan Trust are working to restore the Badshahi Ashoorkhana monument.

About Badshahi Ashoorkhana

- Badshahi Ashoorkhana is a Shia Muslim mourning place, near Charminar in Hyderabad, India. It was constructed in memory of martyrdom of Imam Hussain in the battle of Karbala, and is used during the festival of Moharram.
- It was built by **Muhammad Quli Qutb Shah** in 1611, three years after building the Charminar.
- Ashoorkhana is famous for its resplendent tile work that have retained their lustre and vibrant colours even after four centuries.

About Muhammad Quli Qutb Shah

- He was the fifth sultan of the Qutb Shahi dynasty of Golkonda who ascended to the throne in 1580.
- He founded the city of Hyderabad and built its architectural centerpiece, the **Charminar**. He also built Charkaman archways.
- He is a contemporary of Tulsidas, Mirabai and Surdas. His poetry is bound to earth and revels in the universality of love and mystic experiences.
- During his reign, Jean Baptiste Tavernier visited and wrote about walking into the Qutb Shahi tombs complex where carpets were laid out and whoever walked in was served *pulao*.

Battle of Karbala

- It took place in 680 A.D. Ashoora or 10th day of Muharram. brief military engagement in a place called Karbala in Iraq, in which a small party led by al-hussain, grandson of the Prophet was defeated and massacred by an army sent by the Umayyad caliph Yazid I.
- The battle among Shiaite Muslims (followers of al-hussain) the 10th of Muharram became an annual holy day of public mourning.

8.4. SEVA BHOJ SCHEME

Why in news?

Recently, Ministry of Culture launched a new scheme "Seva Bhoj Yojna".

More about the scheme

- It is a central sector scheme to reduce financial burden of Charitable Religious Institutions.
- It envisages reimbursing the Central Government share of Central Goods and Services Tax (CGST) and Integrated Goods and Service Tax (IGST) of such Charitable Religious Institutions who provide Food/Prasad/Langar/Bhandara free of cost without any discrimination to Public/Devotees.
- It is applicable to all Charitable Religious Institutions such as Temples, Gurudwara, Mosque, Church, Dharmik Ashram, Dargah, Matth, Monasteries etc. which follows following norms:
 - which have been in existence for preceding five years before applying for financial assistance/grant.
 - which have been distributing free food, langar and prasad to public for at least past three years on the day of application.
 - which serve free food to at least 5000 people in a month.
 - which should not be blacklisted under provisions of FCRA or any other Act/Rules of the Central/State Government.

- The ministry will register the eligible charitable religious institutions for a time period ending with finance commission period and subsequently the registration may be renewed subject to the performance evaluation of the institutions.

8.5. 37TH UNESCO WORLD HERITAGE SITE

Why in news?

India's nomination of the architectures of "**Victorian and Art Deco Ensembles of Mumbai**" has been included in **UNESCO's World Heritage list**.

More about news

- It has been included in the list **under Criteria (ii) and (iv)** of the UNESCO's Operational Guidelines.
- India accepted the renaming of the ensemble as **Victorian Gothic and Art Deco Ensembles of Mumbai** as recommended by the World Heritage Committee.
- This is the **third site from Mumbai** after the **Elephanta Caves** and **Chhatrapati Shivaji Terminus railway station**.
- Across India, there are now **37 world heritage sites**. With **five sites**, **Maharashtra has the maximum number of sites in India**.
- India stands **second largest in number after China** in **ASPAC (Asia and Pacific) region**. It is **overall sixth in the world**.

About the sites

- This collection of **Victorian and Art Deco landmarks** is **the largest such conglomeration and first** of the combination of these two genres of architecture in the world **to be included in world heritage list**.
- The Ensemble consists of **94 buildings primarily of 19th century Victorian Gothic revival and early 20th century Art Deco style of architecture with the Oval Maidan in the centre**.
- Some characteristics of Victorian art are: Use of **pointed arches, Heavy stone and brick work**, Use of **polychromes** (contrasting colors) and **Bold** forms like towers, massive hip and gabled roofs.
- Art Deco, also called **style modern** was movement in the decorative arts and architecture. The Art Deco edifices, with their cinemas and residential buildings, blend Indian design with Art Deco imagery, creating a unique style that has been described as Indo-Deco.

Selection criteria (ii) and (iv)

(ii) - To exhibit an important interchange of human values on developments in architecture or technology, monumental arts, town-planning or landscape design.

(iv) - To be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates a significant stage in human history.

World Heritage Committee

- It is the executive body responsible for the implementation of the World Heritage Convention.
- The **Convention** is an international agreement adopted in **1972** by the Member States of the UNESCO.
- The primary mission of the Convention is **to identify and protect the world's natural and cultural heritage considered to be of Outstanding Universal Value**
- Strategic Objectives Of the convention is based on the "**Five Cs**": **Credibility, Conservation, Capacity-building, Communication, Communities**
- The Convention **serves as a catalyst to raising awareness for heritage preservation**.
- **The World Heritage Fund**, setup under convention, provides financial assistance to States Parties in **identifying, preserving and promoting World Heritage sites**.

8.6. AMBUBACHI MELA

Why in News?

Ambubachi Mela, a four day annual fair was held recently at Kamakhya Temple in Guwahati, Assam.

About the Fair

- It is celebrated to mark the annual menstruation of Goddess at Kamakhya temple.
- The fair takes place in June every year and this year it was held from 22 June to 26 June.

Significance of the Fair

- It is considered as an auspicious period when women pray for fertility and celebrate child bearing capabilities of women.
- It also marks as an occasion to promote awareness about menstrual hygiene.
- **Tuloni Biya Ritual:** meaning 'small wedding', it is the celebration of attainment of womanhood of Girls in Assam.

About Kamakhya Temple:

- Situated on the Nilanchal Hills in Guwahati, Assam, it is one of the 52 Shakti peeths or Seat of Shakti followers
- It is believed to be the site where Hindu deity Sati's womb and genitals fell after she burned to death
- Kamakhya Devi, the reigning deity, is also worshipped as the Goddess of fertility
- It is also considered as one of the prime seats of Tantric rituals.

8.7. INDIA-VIETNAM MOU ON POSTAL STAMP

Why in news?

Recently, Union Cabinet has signed a MoU with Vietnam on postal stamp.

Background

- The Postal department of Vietnam and Indian had signed an agreement in December 2017 to issue a joint stamp on "India-Vietnam: Joint Issue on the theme 'Ancient Architecture'".
- The Agreement has been approved now by the Cabinet.
- The Joint commemorative stamp depicts **Sanchi Stupa and Pho Minh Pagoda of Vietnam** which was released on January 25.

Sanchi Stupa

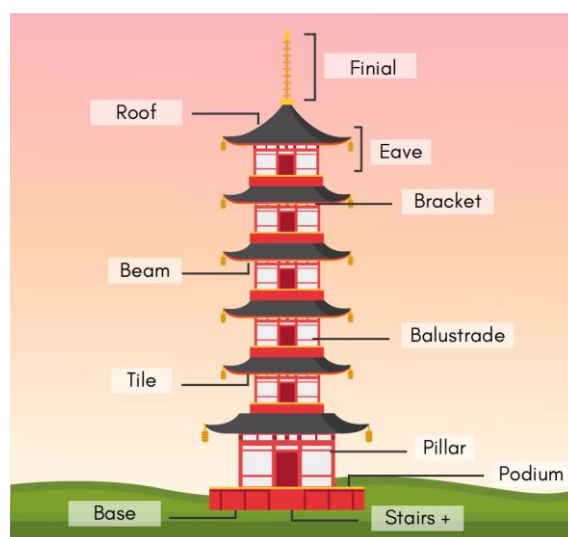
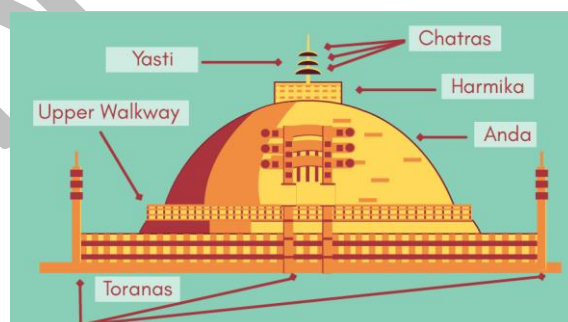
- It is one of the oldest structures in India and was commissioned by 3rd century BCE by **Emperor Ashoka**.
- It is believed that during the reign of Shunga Emperor Pushyamitra Shunga it was **vandalised**. While under Agnimitra Shunga, son of Pushyamitra, it was refurbished.
- During the **Satavahans Period** the gateways, and the balustrade were built and highly decorated. The gateways commissioned were covered with **narrative structures**. The figure of Lord Buddha was carved in these structures as canopy under the Bodhi Tree at the point of Enlightenment. Various **events of life of Lord Buddha** were carved.
- As seen in the figure the main parts of the Stupa are – Anda, Harmika, Chatri, Pradakshinapatha, Medhi, Vedika and Torana.
- The Sanchi Stupa has four beautifully carved Toranas or the gateways which depict various **events of Buddhas' life** and Jatakas.
- It has been enlisted as **UNESCO world heritage site** in 1989.

Pho Minh Pagoda of Vietnam

- It was built originally during the **Ly Dynasty** and was later expanded in 1262 during Tran Dynasty.
- It was a place for **high-ranking mandarins** and the aristocracy of the Tran Royal Court to worship and lead their religious life.

What is the difference between a stupa and pagoda?

- In general, however, "stupa" is the term used for a Buddhist structure in India or Southeast Asia while "pagoda" refers to temple or a sacred building in East Asia which can be entered, and which may be secular in purpose.
- Stupa is a hemispherical dome shaped structure which contains relics or remains of Buddha or a Bodhistava, whereas Pagodas have sets of multiple discs.
- Unlike the typical stupa, the pagoda actually has interior space, sometimes on several levels.
- Pagodas are found in Nepal, China, Japan, Korea, Vietnam, Myanmar, Sri Lanka etc.



9. ETHICS

9.1. THE PROBLEM WITH EXAMINATIONS

Why this theme?

Life is full of examinations – implicit as well as explicit. But the concern here is regarding the standard examinations, conducted across various educational institutes for different objectives.. Every year, in India, CBSE and other education boards release results for Std. X, XII and so on. Tests are conducted for admissions to higher education institutes or to get employment. These exams determine life prospects of several people across the world. There are ‘exam leaks’ reported now and then. And invariably, every year, debates and discussions are initiated on dimensions these exams touch. A few are discussed below.

What is the purpose of standard examinations?

- To gauge if the student/ learner has acquired the minimum level of knowledge/skill she was taught (pass-level)
- To grade the student/ learner as per the level of knowledge/ skill acquired e.g. beginner, expert etc. (can be used for admissions in higher level courses)
- To compare year-on-year performance of students – so as to understand effectiveness of education policy or to gauge quality of particular course/ institute etc.

What are the positives and negatives of these standard examinations?

Positive aspects	Negative aspects or limitations
<ul style="list-style-type: none">• Uniform for all – hence comparison becomes easy• Subjective understanding is tested objectively• Established credibility of standards makes assessment trustworthy	<ul style="list-style-type: none">• These, especially the entrance tests, do not account for differences in candidates’ background e.g. rural or urban, affordability for tutorship programs etc.• Limited in time, these become crude measures of evaluating, say, an year-long learning in a couple of hours• These put undue pressure on the candidates, that may lead to impaired performance• These cannot measure various dimensions of talent profile that a student/ learner possesses• These may lack transparency in their conduct

What are the consequences?

- Deserving candidates may be left out, due to poor performance under anxiety or other circumstances on the “D-day”
- These tests become means of ‘elimination’ rather than ‘selection’, undermining intrinsic human worth
- Lopsided focus on the curriculum impairs growth of creativity and spirit of innovation
- Poor correlation is found between exam results and subsequent performance e.g. students unable to perform in IITs after selections, candidate scoring good score in Ethics paper of UPSC CSE found to undertake unethical practices etc.
- These exams become larger than life, leading to suicides by many promising people every year
- Human capabilities are measured in terms of labels acquired by individuals – a piece of paper (e.g. degree) is worth more than word or action of a human
- Entrance tests breed growth of coaching industry, and raise level of competition to an extent that a decent candidate, who cannot afford such services, may not even enter the institute/ employment she deserves otherwise.

What are the alternatives?

- Continuous and composite assessments
- Designing and implementation of multi-dimensional profile cards
- More variables in the reservation criteria such as education level of parents, place of primary/ secondary education etc.

- Mentoring and counselling centres across institutes to help students learn about all opportunities, to cope with career pressures and other mental turmoil they go through
- Above all, change in societal perception of human beings, which is now based 'labels' than human substance.

Unanswered questions

- Do these examinations worth the lives they take away?
- What is the worth of one mark (pass vs. fail), one second (first vs. second), and one run (win vs. loss)?
- Do these violate human rights, by impinging upon human dignity?
- Can't people be wiser without formal education? Weren't they, in ancient times?
- What are the limits of education policy? Does it capture diversity of talents?

Standardised examinations concern formal knowledge but **life examinations** concern character. And knowledge without character is deemed as a sin, by Gandhi ji. This dimension needs to be accommodated in our systems to ensure a better, civilized and respectful society.

9.2. ARTIFICIAL INTELLIGENCE AND ETHICS

What is artificial intelligence?

Artificial intelligence (AI) is an area of computer science that emphasizes the creation of intelligent machines that work and react like humans. The research in AI has focused chiefly on the components of intelligence which includes learning, reasoning, problem solving, perception, speech recognition and using language. Systems that use artificial intelligence technologies are becoming increasingly autonomous in terms of the complexity of the tasks they can perform, their potential impact on the world and the diminishing ability of humans to understand, predict and control their functioning. Since, they can learn from their own experiences and can perform actions beyond the scope of those intended by their creator, they add a dimension of ethics to it.

Ethical Issues involved in AI

- **Transparency:** When AI is involved in cognitive works with social dimensions, such as decision of an AI enabled car during an accident (resolving famous **Trolley Problem of ethics**), it is important that the AI algorithm developed for it is transparent.
- **Biasedness:** The algorithms used in artificial intelligence are discrete and, in most cases, trade secrets. They can be biased, for example, in the process of self-learning, they can absorb and adopt the stereotypes that exist in society or which are transferred to them by developers and make decisions based on them.
- **Predictability:** The algorithms taking over social functions must be predictable to those they govern. The local, specific behavior of the AI may not be predictable apart from its safety, even if the programmers do everything right.
- **Accountability:** If an AI system fails at its assigned task, who should be made responsible for it?
- **Safety Issues:** AI machines can use their intelligence in specific domains for which they are designed. They might not work in a situation which has never been envisioned. This can create safety issues for others.
- **Maneuverability:** The AI algorithms can be manipulated by people who want to take advantage e.g. criminals willing to carry a gun in airplane can find a loophole in machine vision system and can exploit the flaws in it compromising lives of all other.
- **Moral Status:** Currently AI systems have not been given any moral status. Therefore, they can be copied, deleted, changed or terminated as the programmers are pleased. But, future AI systems can have both **sentience** and **sapience**. Discriminating them will tantamount to racism.
- **Lack of consciousness:** There is possibility that a future AI system is sapient but does not have sentience or consciousness in it. In that case should they have a moral status like other sentient beings.

Trolley Problem

This is a well-known thought experiment in ethics which raises a number of important ethical issues related to AI. It says that if a runaway trolley is going down the railway lines and five people are tied to the track ahead. You are in front of a lever which can switch the trolley to a different set of track. However, there is another person tied to that track. will you pull the lever or not?

Sapience: a set of capacities associated with higher intelligence, such as self-awareness and being a reason-responsive agent.

Sentience: the capacity for phenomenal experience or qualia, such as the capacity to feel pain and suffer.

- **Super-intelligence:** A sufficiently intelligent AI system can redesign itself or can create a better successor system and so on leading to intelligence explosion. Whether this super-intelligence will be good or evil to human kind will depend upon its technological capabilities and ethicality. Though the probability of creating technologically advanced being is high, how can one create an AI system which when executes becomes more ethical than the original programmer?

Way-forward for AI

- Although current AI systems offer few ethical issues, they need to be more predictable and transparent when social roles are involved.
- The French strategy can be adopted which proposes to develop transparent algorithms that can be tested and verified, determining the ethical responsibility of those working in artificial intelligence, creating an ethics advisory committee, etc.
- Resolutions can be brought to regulate Robotics, and code of ethical conducts can be brought for Robotic engineers, as well as Research ethics committees.
- Four ethical principles can be followed in Robotics Engineering such as:
 - **Beneficence:** robots should act in the best interests of humans
 - **Non-maleficence:** robots should not harm humans
 - **Autonomy:** human interaction with robots should be voluntary, and
 - **Justice:** the benefits of robotics should be distributed fairly

Conclusion

AI systems should be made legally liable for their actions through making their programmers and users accountable. But, this may hamper innovation. Therefore, a balanced approach is needed and for that we must know what goals we are pursuing in the development of artificial intelligence and how effective will it be.

“ The Secret To Getting Ahead Is Getting Started ”

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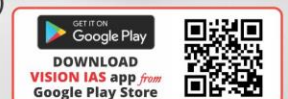
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10. MISCELLANEOUS

10.1. NEW INITIATIVES FOR MSMES

Why in news?

Recently, **Solar Charkha mission** and **Sampark portal** were launched by the President.

More on news

- Under the Solar Charkha mission the Ministry of Micro Small and Medium Enterprise will disburse a subsidy of Rs 550 crore to artisans, generating employment in rural areas and contributing to the green economy.
 - It will cover 50 clusters and every cluster will employ 400 to 2000 artisans.
 - It will help in furthering the cause of women empowerment by linking 5 crore women and self-help groups with the initiative.
- **Sampark Portal** is a digital platform to connect five lakh job seekers with recruiters

10.2. GLOBAL PEACE INDEX 2018

Why in news?

Recently, Global Peace Index, 2018 was Institute for Economics and Peace.

Findings of GPI 2018

- Global level of **peace has deteriorated** by 0.27% in the last year marking the **fourth year of successive deterioration** with peace deteriorating in 92 countries while it improved for only 71.
- Iceland remained the **most peaceful country**, other top peaceful nations being New Zealand, Austria, Portugal etc. while Syria remained the **least peaceful country**, others being Afghanistan, South Sudan, etc.
- Out of nine regions of the world in six regions peace has deteriorated with Europe, North America, Asia-Pacific and South America being most peaceful.
- **The economic impact of violence** has increased by 16% since 2012, corresponding with the Syrian war and rising violence in the aftermath of the Arab Spring.

About Global Peace Index 2018

- It is a measure of global peacefulness. It presents the most **comprehensive data-driven analysis** to-date on trends in peace, its economic value and how to develop peaceful societies.
- It is the **12th edition** and ranks 163 independent states and territories.
- It covers about **99.7% of world's population** using 23 qualitative and quantitative indicators using three thematic domains –
 - The level of Societal Safety and Security
 - The extent of on-going Domestic and International conflicts
 - The degree of Militarisation

GPI 2018 about India

- India has been ranked **136 out of 163** marginally above 137 in 2017.
- The Marginal increase in the rank has been **attributed the Government's efforts** to tackle violent crime, falling level of military expenditure particularly expenditure on importing weapons which slightly improved the militarisation score.
- However, India's score for political instability, political terror score and internal conflict fought has remained elevated.

10.3. GANGA PRAHARIS (GUARDIANS OF THE GANGA)

Why in news?

Recently, a grassroots-level workforce – Ganga Praharis, was launched by the Ministry of Water Resources.

About Ganga Praharis

- To conserve the biodiversity of River Ganga and reduce the direct dependency of local communities on the river, **Wildlife Institute of India** and **National Mission for Clean Ganga** under the "**Biodiversity Conservation**

and Ganga Rejuvenation” have roped in the local community of five Ganga states (Uttar Pradesh, Bihar, Jharkhand, West Bengal and Uttarakhand) known as **Ganga Praharis**.

- They are a cadre of **self-motivated and trained volunteers** from local communities working for biodiversity conservation and cleanliness of Ganga with an objective of **Nirmal and Aviral Ganga**. They will **create awareness** about the benefits of the clean and vibrant Ganga thus creating a mass-movement to clean Ganga and create a convergence point at grassroot level by linking livelihood of local communities with overall efforts of various agencies working for clean Ganga.
- Ganga Praharis of all the five Ganga basin states will be **connected through** Bhuvan Ganga App, mygov App and Swachhta app thus creating a broadband network among them.

National Mission for Clean Ganga (NMCG)

- It is the **implementing wing** of National Council for Rejuvenation, Protection and Management of River Ganga.
- It is registered as a society under the Societies Registration Act 1860.
- Aims of NMCG –
 - To ensure effective **abatement of pollution** and rejuvenation of Ganga basin approach to promote inter-sectoral co-ordination for comprehensive planning and management
 - To **maintain minimum ecological flows** in the river Ganga with the aim of ensuring water quality and environmentally sustainable development.

10.4. OPERATION NISTAR

- Recently Operation Nistar was conducted by the Indian Navy (INS Sunayna).
- The operation was conducted to bring back Indians stranded in **Socotra island (Yemen)** after **Cyclone Mekunu** hit the area.

10.5. QUEEN PINEAPPLE

Why in news?

Recently the Queen variety of pineapple is declared as Tripura's state fruit.

About the fruit

- Queen pineapple is **spiny, golden yellow in colour** with a pleasant aroma and flavour.
- Its sweetness and unique aroma differentiates it from pineapples of other states of Northeast region.
- It had received Geographical Indication (GI) tag in 2015.
- Tripura is one of the largest pineapple growing states in country.

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