

1.1. INDEPENDENCE VS ACCOUNTABILITY OF RBI

Why in news?

Recently Deputy Governor of Reserve Bank of India (RBI) Viral Acharya warned the government against curbing the independence of the central bank.

Background

- RBI had been favouring for more autonomy as governor after governor has raised this issue.
- The government might invoke so far never-used **Section 7 of the RBI Act 1934**, in which it will issue an order to the RBI to take into account the government instructions in the public interest which might impact autonomy of RBI.

Why Independence of RBI is important?

- Implementing policies:** The RBI has multiple policy objectives that serve the public interest from price stability, growth, development to financial stability that also have political consequences. The central bank has to have a clear mandate and simultaneously the necessary operational freedom to fulfil its mandate.
- Free from Political interferences:** There had been numerous cases of interference by the political class in the RBI's appointments and administration and in its credit authorization policies to the benefit of large business houses. Direct intervention and interference by the government in the operational mandate of the central bank negates its functional autonomy.
- Regulation:** It is also important that RBI is statutorily limited in undertaking the full scope of actions against public sector banks (PSBs) as also in case of PNB fraud which eroded credibility of RBI.
- Separate institute:** The central bank is set up as an institution separate from the government. It is not a department of the executive function of the government. Its powers are enshrined as being separate through relevant legislation.
- Ensuring Sustainable Economic Growth:** Central bank autonomy fosters price and financial sector stability that are conducive to sustainable economic growth.

Section 7 of RBI Act

- According to it, the Central government may issue directions to the RBI as it may "consider necessary in public interest" after consultation with the RBI Governor.
- Section 7 deals with 'management' of RBI. It also states that "Subject to any such directions, the general superintendence and direction of the affairs and business of the Bank shall be entrusted to a **Central Board of Directors** which may exercise all powers and do all acts and things which may be exercised or done by the Bank."
- Reserve Bank's affairs are governed by a central board of directors which is appointed for period of four years by the Government of India. It composes of:
 - Official Directors: Full-time: Governor and not more than four Deputy Governors
 - Non-Official Directors: Nominated by Government: ten Directors from various fields and two government Official
 - Others: four Directors- one each from four local boards.

LOCKING HORNS

The govt and the RBI disagreed on several issues recently



FRDI Bill 2017

GOVT: Proposed a resolution corporation for distressed financial firms

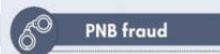
RBI: Opposed it to avoid conflicts of jurisdiction



Regulatory powers over banks

GOVT: RBI has wide-ranging powers over public sector banks

RBI: Regulatory powers over PSBs weaker than over private banks



PNB fraud

GOVT: Questioned the RBI on supervisory lapses

RBI: Regulatory powers are weak



PCA norms

GOVT: Align with global norms

RBI: Important to continue



NBFC liquidity

Govt: Provide special refinance window

RBI: Liquidity issue not systemic



February 12 circular on NPAs

GOVT: Dilute norms for power firms

RBI: No relaxation; need to resolve stressed assets in a time-bound manner



Norms for payments system

GOVT: Proposed an independent Payments regulatory board

RBI: Must remain within the RBI

Why Accountability of RBI is important?

- **Democracy:** In a democracy, sovereignty lies with the people. And government, not the central bank, is answerable to the people. If the Reserve Bank, for instance, fails to keep inflation low, it is the government that pays the price, not RBI.
- **Answerable in failures:** The flip side of autonomy is accountability and the RBI should be answerable if it fails to achieve these goals. The progressive widening and deepening of the activities of the RBI in different sectors of the economy affect the lives of millions. Hence any type of failure should be answerable by RBI.
- **More transparency:** The central bank can also make mistakes, and is generally held publicly accountable through parliamentary scrutiny and transparency norms. This ensure more transparency in the system with clearly defined roles.
- **Accountable through Government:** The RBI is autonomous but within the framework of the RBI Act. Hence Central bank cannot claim absolute autonomy. It is autonomy within the limits set by the government and its extent depends on the subject and the context.

Way forward

- There is need to pay due regard to both autonomy and accountability. There has to be a forum within our democratic structure where the RBI is obligated to explain and defend its position.
- Institutional autonomy of RBI has to be respected and all institutions will have to work together to achieve the common goal. All the institutions should integrate the objective of the overall governance.
- However, the quality of governance is of utmost significance which is provided to the people, by public institutions. That does not get resolved by merely looking at institutional autonomy. In the theory and practice of good governance, autonomy must be counter-balanced by with robust instruments of transparency and accountability.
- Transparency provides an essential basis for accountability and democratic legitimacy by enabling effective legislative oversight.
- There should be a balance between autonomy and accountability. For example - we have an inflation targeting model now and the central bank is accountable for its inflation targeting. Similarly, there can be such autonomy and accountability for financial sector regulation by creating some desirable objectives.
- FSLRC sought to modernize governance and make regulators more independent as well as more accountable. For example, it proposed to do away with the government's power to give directions, while it sought to make boards of regulators more accountable and transparent with agenda and minutes of board meetings to be public, and with boards having the responsibility of approving all regulations after due process.
- Since the goals of the government and the RBI coincide, both have to respect each other's operational space. While economic growth is impossible without adequate credit, the RBI needs to ensure that its policies do not hamper the growth of credit and investment.
- If regulatory powers need a review, Parliament should make law accordingly. There should be clarity on the regulatory powers of RBI as well as Government.

1.2. DEMAND FOR GORKHALAND

Why in News?

Gorkha Janmukti Morcha (GJM) meets Union government on the issue of Gorkhaland.

Gorkhaland Movement:

- The Gorkhaland movement is a long-standing quest for a separate State of Gorkhaland within India for Nepali-speaking Indian citizens (often known as 'Gorkhas').
- With roots dating back over a century, Gorkhaland is a classic sub-nationalist movement, not unlike those that have produced other States, most recently Telangana, Uttarakhand, Jharkhand etc.
- The movement is neither separatist nor anti-nationalist rather by demanding Gorkhaland, the people of Darjeeling-Kalimpong are opting out of West Bengal's domination, and opting in to the democratic frameworks of India writ large.

Why demand for Gorkhaland?

- **Ethnic differences:** The people belonging to this area hardly have any connection with the Bengali community and are different in ethnicity, culture and language.
- **Aspiration of Indian Gorkha Identity:** Due to racial discrimination, when they seek education and work in big cities like Bangalore, Delhi, etc., they are treated as foreigners. Therefore they seek a separate identity within the Indian dominion.
- **Economic deprivation:** Gorkhas remain pegged to the lowest levels of employment, while outsiders own the tea industry, meaning its profits flow out of the hills.
- **Cultural impositions:** The imposition of Bengali language by the state government is seen as extension of histories of domination and a threat to their identity.
- **Other reasons** include linguistic chauvinism, resource extraction, unilateral territorial claims, denial of self-governance, political suppression; and an unwillingness to respect the 'native point of view'.

About Gorkhas

- Gorkhas (or Gurkhas) are Nepali-origin people who take their name from the 8th-century Hindu warrior-saint Guru Gorakhnath and from the Nepal hill town of Gorkha. In India, the word is sometimes used to make a distinction between Indian Gorkhas, who are citizens of India, and Nepali citizens who are living in India.
- In a notification issued on August 23, 1988, the Home Ministry clarified that 'Gorkhas domiciled in India at the time of commencement of the Constitution, and those born in India, or born to one or both parents born in India, are citizens of India'.

History of Gorkhaland movement:

- In 1780, the Gorkhas captured Sikkim and most part of North Eastern states including Darjeeling in 1780. After 35 years of rule, the Gorkhas surrendered the territory to British in the Treaty of Segoulee in 1816, after they lost the Anglo-Nepal war.
- However, though British handed over Darjeeling to Sikkim, it was taken back for political reasons in 1835. Before 1905, when Viceroy of India, Lord Curzon directed the partition of Bengal, Darjeeling was a part of Rajshahi division, which now falls in Bangladesh. For a short period from 1905-1912, it was even a part of Bhagalpur division. Darjeeling was merged with West Bengal after the partition of 1947.
- All India Gorkha League began a movement for a separate state in 1949.

Responses to Gorkhaland

- **Darjeeling Gorkha Hill Council (DGHC):** Following the agitation that began in 1986, a tripartite agreement was reached between Centre, Government of West Bengal, and Gorkha National Liberation Front in July 1988. Under this, an autonomous Hill Council (DGHC) under a State Act was set up for "the social, economic, educational, and cultural advancement of the people residing in the Hill areas of Darjeeling District".

Problems:

- The Council was given limited executive powers but in the absence of legislative powers the aspirations of the people of the region could not be addressed.
- The non-inclusion of the Dooars region in the Council became a major reason of discontent.
- **Gorkhaland Territorial Administration (GTA):** created in 2012 through a tripartite agreement signed by governments of centre and state and Gorkha Janmukti Morcha (GJM), replaced the Darjeeling Gorkha Hill Council. It is a semi-autonomous administrative body. It has administrative, executive and financial powers but no legislative powers.

Problems:

- Lack of legislative powers means that the people of the region have no control over laws to govern themselves by.
- Dooars again has been left out and instead a verification team has been set to identify "Gorkha majority" areas in the Dooars.

Arguments in favour of new State of Gorkhaland:

- Various states have been created on **linguistic grounds** or, more recently, for **socio-economic reasons**. Recent States such as Uttarakhand, Chattisgarh and Telangana have been created on the latter basis.
- Gorkhaland fits the bill on both counts — it is linguistically and culturally distinct from the plains of Bengal and can justifiably perceive Statehood as the answer to its socio-economic concerns.
- The **experiments with incremental autonomy were not successful** including the GTA's first five-year term till 2017. These were only experiments with interim arrangements. The only permanent solution lies in creation of Gorkhaland.

Arguments against

- **Small geographical area:** Darjeeling had been **too small** to be constituted as a state. According to official records Darjeeling district has a geographical area of about 3,149 sq km with three Assembly seats and only a part of a Lok Sabha seat.
- **Security Issues:** It shares a complex relationship with unstable Nepal which has a history of using China as a trump card against India. The Maoist uprising in Nepal and Naxalite movement originated in the foothills of Darjeeling bolsters such fears.
- **Trigger for other such demands:** Once we recognize such a demand, a Pandora's Box shall be opened. It not only **jeopardizes the plural character** of our society, but also opens the flood-gates for similar such demands from vested interests in different parts of the country.
- **Administrative Feasibility:** Firstly not all Nepali speaking people are demanding Gorkhaland. Secondly, they are very unevenly distributed throughout the region and it is very difficult to chalk out boundaries of the new state without administrative difficulties, as also observed by the **Justice Shyamal Sen Commission** (constituted to explore the feasibility of such inclusions).

Way forward

- To start with there is an urgent need to make efforts both by the government and the community to make Gorkhas feel included both socially as well as economically. The Government needs to be more sensitive towards needs and aspirations of Gorkhas. E.g. Instead of imposing Bengali, it could have been made optional.
- The state government and the Centre need to put in enough time and money to build civic amenities, culture and agency so that Gorkha communities can reset their connection with the state.
- Discussions should be held to further delegate legislative powers as well.
- Further, second State Reorganisation Commission can be set up to study and address the demands of statehood in various parts of India.

1.3. LIVE-STREAMING OF SUPREME COURT PROCEEDINGS

Why in News?

Supreme Court (SC) approves live-streaming of court proceedings and directed the centre to frame rules for this.

More on the News:

- The SC agreed that live-streaming of court proceedings would serve as an instrument for greater accountability and formed part of the Code of Criminal Procedure, 1973.
- The SC held that the right to justice under Article 21 of the Constitution would be meaningful only if the public gets access to the proceedings and to witness proceedings live.

Arguments in favour

- **Concept of open courts:** Indian legal system is built on the concept of open courts, which means that the proceedings are open to all members of the public.
- **To promote transparency:** Live-streaming has been allowed for both Lok Sabha and Rajya Sabha proceedings since 2004.
- **Lack of physical Infrastructure:** On any given day, only a handful of people can be physically present and are allowed in the courtroom.
- **Digitization:** While the courts are opting for digitisation, with online records of all cases, filing FIRs online etc. there is a need to make live streaming of the proceedings also.
- **Public Interest Issues:** Matters which have a bearing on important public interest issues such as entry of women to the Sabarimala temple, or the scope of the right to the choice of one's food should be available for all to watch which helps to build the right perception.
- **The right to information, access to justice and need to educate common people on how the judiciary functions** are all strong reasons in favour of allowing live-streaming.

Arguments against

- The unwanted public gaze caused by live-streaming will tend to make judges subject to popular public opinion and accountable to the general public.
- The role of the judiciary cannot be equated with the roles of the legislature and the executive. The broadcasting of parliamentary proceedings may be good for ensuring accountability, this is not the case with the courts.
- The individuality of judges is more likely to become a subject of public debate through live-streaming, creating problems of its own. The focus should be on the judgment delivered.
- There is a greater likelihood of lawyers aspiring to publicise themselves tend to address not only the judges but also the public watching them which will hamper their objectivity.
- Instead of live-streaming, audio and video recordings of court proceedings would reform the administration of justice. These can be used at the time of review or appeal of a case.

Way forward

- Only a specified category of cases or cases of constitutional and national importance being argued for final hearing before the Constitution Bench be live streamed as a pilot project.
- The discretion of the Court to grant or refuse to grant such permission should be, inter alia, guided by the following considerations:
 - Unanimous consent of the parties involved and the sensitivity of the subject matter.
 - Any other reason considered necessary or appropriate in the larger interest of administration of justice, including as to whether such broadcast will affect the dignity of the court itself or interfere with/prejudice the rights of the parties to a fair trial.
- Provide for transcribing facilities and archive the audio-visual record of the proceedings to litigants and other interested persons who are unable to witness the hearings on account of constraints of time, resources, or the ability to travel long distances.

1.4. SUB-ORDINATE COURTS

Why in News?

Supreme Court expresses concern over the high level of vacancy in subordinate courts.

Background

- Subordinate courts perform the most critical judicial functions that affect the life of the common man: **conducting trials, settling civil disputes, and implementing the bare bones of the law.**
- But there are various issues faced by the lower judiciary. Many of these emerge from the problem of high level of vacancy for the posts of judges. For example, there are **5,133 judges posts vacant** in the subordinate judiciary against a sanctioned strength of 22,677 across the country.

Other Issues faced by Subordinate Courts

- Issues in recruitment:** There is tardiness in the process of calling for applications, holding recruitment examinations and declaring the results.
 - Apart from that, according to a recent study, the **recruitment cycle** in most States far exceeded the time limit prescribed by the Supreme Court.
- Pendency of cases:** Due to laxity in recruitment process there has been an increasing pendency in lower courts with 22.57 lakh cases pending for more than 10 years, some as old as two or three decades.
- Lack of uniformity in frequency of hearings** among the subordinate courts in the country. Higher frequency shows that more cases are being heard in shorter time span. This may affect the overall quality of justice delivered.
- Delays in evidence collection and examination of witnesses** which impacts the overall process of the court.
- Lack of Infrastructure:** Any failure to allocate the required human and financial resources may lead to the crippling of judicial work in the subordinate courts. It majorly has two components-
 - Firstly, there is a lack of legal and para-legal staff and a dearth of well-trained investigating staff.
 - Secondly, lack of funds to support various processes like recruitment and support the needs of the recruited staff, is another issue.

Way Forward

- A smooth and time-bound process of making appointments would, require **close coordination** between the High Courts and the State Public Service Commissions.
- The situation demands a **massive infusion of both manpower and resources.**
 - Strengthening of court infrastructure requires "immediate attention" in the form of planning, enhanced budgeting and structured implementation.
 - Proportionate recruitment of legal and paralegal staff** too has to be addressed along with the need for **well-trained staff** responsible for preliminary investigation such as evidence collection and examination of witnesses.
- Create an **All-India Judicial Service (AIJS)** along the lines of the All India Services (AIS). It will create a cadre of judges who can be appointed at the district courts level across the country and ensure a transparent and efficient method of recruitment to attract the best talent in India's legal profession.
- Utilizing Information Communication Technology to improve the judicial and administrative process in courts and also scaling up E-courts projects to provide efficient & time-bound citizen centric services delivery has a potential to go a long way.

Recruitment Process

District Courts

- The appointment, posting and promotion of district judges in a state are made by the governor of the state in consultation with the high court. A person to be appointed as district judge should have the following qualifications:
 - He should not already be in the service of the Central or the state government.
 - He should have been an advocate or a pleader for seven years.
 - He should be recommended by the high court for appointment.
- Appointment of other Judges (other than district judges) to the judicial service of a state are made by the governor of the state after consultation with the State Public Service Commission and the high court.

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1.5. SABKI YOJANA, SABKA VIKAS

Why in news?

Recently, the central government launched a campaign, Sabki Yojana, Sabka Vikas on October 2.

About Sabki Yojana Sabka Vikas campaign

- The campaign will involve people at the grassroots while preparing structured gram panchayat development plans.
- It will also involve thorough audit of the works done in the last few years.
- Under the campaign, which will conclude in December this year, gram panchayats will have to publicly display all sources of funds collected and their annual spending, along with future development initiatives.
- This would help in making the exercise of formulating Gram panchayat development plans more structured which has been largely unorganized till now.

About Gram Panchayat Development Plan (GPDP):

- It is an annual plan of each panchayat where the villagers would decide where the money should be spent.
- The Gram Panchayat Development Plan aims to strengthen the role of 31 lakh elected Panchayat leaders and 2.5 crore SHG Women under DAY-NRLM in effective gram sabha.

Significance of GPDP

- Stakeholder involvement:** Judicious planning with involvement of all stakeholders is critical for success of any activity. Community involvement leads to quality works and acceptance by local inhabitants
- Consolidation of all financial resources at Gram Panchayat (GP) level:** Pooling of resources helps in optimum outcomes.
- Development works:** They are undertaken in prioritized manner through collective visioning. It also helps to reach marginalized sections and achieve specific development goals within a specified time-frame.
- Responsive government:** It activates PRI level bureaucracy and also strengthens bond between government, GP & local inhabitants leading to responsive government.



Some concerns about existing GPDP process

- Lack of awareness and Inadequate people's participation in the gram sabhas.
- Over-emphasis on investment in infrastructure.
- Inadequate public service delivery and enablement of panchayats.
- Review of GPDP at Block/ District/ State levels non-existent.
- Lack of integration in Plans at block and district levels.
- GPDP being prepared as a wishlist owing to lack of technical support to GPs for GPDP preparation.

1.6. URBAN SLUMS

Why in news?

Maharashtra government recently launched a new initiative to redevelop Dharavi- one of the largest slums in the world.

Slum in India

- A Slum, for the purpose of Census has been defined as residential areas where dwellings are unfit for human habitation by reasons of dilapidation, overcrowding, faulty arrangements and design of such buildings, narrowness or faulty arrangement of street, lack of ventilation, light, or sanitation facilities or any combination of these factors which are detrimental to the safety and health.
- **Facts from Census 2011 Results and National Sample Survey (NSS) 69th Round on Urban Slums in India, 2012**
 - A total of 65.49 million population live in slums. The slum population enumerated constitutes 5.4 per cent of the total population of the country and 17.4 percent of the total urban population.
 - An estimated total of 33510 slums existed in the urban areas of India of which only 13761 were notified.
 - Maharashtra, with an estimated 7723 slums, accounted for about 23% of total slums in urban India, followed by Andhra Pradesh (14%) and West Bengal, which had a share of about 12%.
 - The proportion of Scheduled Castes was higher in the slum areas (20.4%) compared to the population of Scheduled Castes in the non-slum areas (11.0%), and urban areas of the country (12.6%).
 - About 8.08 million children are living in slums in India. In other words, **every fifth urban child in the country in the age group of 0-6 is a slum dweller.**

Problems associated with the Slums

- Slums manifest deprivation that transcends income poverty. They are characterized by acute over-crowding, insanitary, unhealthy and dehumanizing living conditions.
- They are subject to insecure land tenure, lack of access to basic minimum civic services such as safe drinking water, sanitation, storm drainage, solid waste management, internal and approach roads, street lighting, education and health care, and poor quality of shelter.
- Many of these habitations are located in environmentally fragile and dangerous zones prone to landslides, floods and other disasters that make the poor residents highly vulnerable.
- A significant proportion of the slum dwellers also face social burdens and health problems worse than their non-slum & rural counterparts.
- Civic bodies do not provide the required municipal services in slums on the plea that these are located on 'illegal' space. Moreover, the scale of the problem is so colossal that it is beyond the means of Municipalities which lack a buoyant fiscal base.

Among the slum blocks (Census 2011)

- 58% have open or no drainage
- 43% must bring water from outside their communities
- 26% do not have access to clean drinking water
- 34% have no public toilets in their communities
- 2 electricity outages occur per day

Reason for development of Slums: Slums are natural by-products of urbanisation, especially in a labour-surplus country like India.

- Urbanisation requires provision of various kinds of consumer services. In a labour-surplus economy, cheap labour is available to provide these services. Hence, an informal sector develops to complement the formal sector. Wages are low but, at the same time, these jobs require physical proximity to centres of employment (cities). So, slums develop.

Governments Approach towards Slum Re-development

- Development of basic infrastructure around a city (roads, electricity, water, sewerage, security) is state responsibility. Yet, we are increasingly witnessing withdrawal of the state from all kinds of public utilities due to financial constraints and push for privatization.
- Increasingly, governments across the globe have come to recognise the right of people to occupy unutilised land for housing as their livelihood is intrinsically linked with where they live. The right to occupy unused land is guaranteed in Brazil's constitution. But in India, citizens don't have such rights. In fact, we have the Public Premises (Eviction of Unauthorized Occupants) Act, 1971, which prohibits the general public from occupying any public premises.

Government Initiatives for Slum Redevelopment

- **National Slum Development Programme (NSDP) - (1996-2002)**
- **Basic Services to Urban Poor (BSUP) (2006-2012)** – It aimed to provide basic services to urban poor in 63 of the largest cities in India by population.
- **Housing for All:** In June 2015, the Cabinet of India approved the Housing for All scheme, with the goal to provide housing to every Indian household by 2022.

Four main components of the Housing for All policy:

- In-situ Slum rehabilitation will use land as a resource to involve private developers
- Public-Private Partnerships to create affordable housing.
- Affordable housing through the Credit Linked Interest Subsidy
- Beneficiary-led individual house construction or enhancement.

- Most official policies have looked at slums in isolation — not as part of the larger problem of housing and mass deprivation, rural and urban, that confront a city. The emphasis has been on providing built units to replace the ‘kutcha’ houses of slums.
- In a high-value real estate market, government-owned lands and places where the slums exist are seen as potential sources of funding infrastructure and mixed residential development. Accordingly, when such lands are developed, only a fraction of the built area is dedicated to social housing and an opportunity is lost to accommodate more of the slum population.
- Many State governments have failed to implement the National Urban Housing and Habitat Policy’s recommendation to allocate 15 per cent of land in residential projects for housing the poor.
- Though there are more than 13.7 million households living in abysmal conditions, States have formally notified only about a third of them as slums. This leaves a large number of others in a more vulnerable condition: health and sanitation facilities hardly reach non-notified slums, and they are prone to forced eviction.
- At the All- India level, only 24% of slums benefited from any welfare schemes like Jawaharlal Nehru National Urban Renewal Mission (JNNURM), Rajiv Awas Yojana (RAY) or any other scheme for improvement of slums run by the Central Government or State Government or any local body.

Way forward

To address the growing needs and deficiencies in slums of India, several sustainable models to improve are recommended in four different categories- administrative, infrastructural, financial and architectural.

- **Administrative:** There is a need to replicate Mumbai’s in-situ Slum Redevelopment Scheme in cities of similar land and population characteristics such as Delhi, Hyderabad, Chennai, and Pune. In these places, a fully subsidized, in-situ slum redevelopment policy, quite similar to the Slum Redevelopment Scheme- Housing for All, would likely see the same success as in Mumbai.
- **Infrastructural:** Construct and retrofit apartment buildings with decentralized infrastructure such as solar energy and anaerobic digestion sanitation.
 - Solar energy proves to be a potential solution for slum redeveloped buildings because of good solar resource in India. Analysts estimate savings up to ₹2, 35,790 over a twenty five year lifetime of the project.
 - On a national policy level- Housing for All, energy analysis resulted in identifying potential of 10 MW worth of solar panel installation across India.
 - Decentralized Sanitation can prevent the environmental pollution and health risks associated with open defecation common among slum households. Upgrading existing septic tanks into bio digester facilities, and increasing dependence on resource recovery technologies, can reduce maintenance and costs, produce energy and nutrient resources, and improve water quality.
- **Financial:** Government needs to ensure long-term ownership rights and improved access to formal financial resources. It is recommended that -
 - The government should grant leasehold rights during the interim period while incentivizing households to work toward an ownership, and encourage innovative lending mechanisms from Housing Finance Companies and Micro-finance Institutions to ensure that housing finance is accessible to large sections of slum population at the end of the transit period.
 - In this way whenever slum dwellers are able to make individual housing choices, the informal economy could truly convert into formal economy, and long-term financial sustainability could be achieved.
- **Architectural:** It is recommended prioritizing community space and spaces for micro-entrepreneurship within building design to increase social and business opportunities.
 - Through incorporating some existing areas of social interaction in informal settlements, as well as past approaches to public housing and slum redevelopment, we need to maintain the social, semi-public, entrepreneurial atmosphere of the streets in newly developed dense vertical redevelopments.

2.1. INDIA-JAPAN RELATIONS

Why in News?

Indian PM recently visited Tokyo for the 13th Indo – Japan annual bilateral summit and issued a joint vision statement.

What Importance does the summit hold?

- **Converging Indo pacific interest-**India and Japan share similar interest in Indo pacific hence called for a free, open, transparent, rule based and inclusive Indo pacific region. Both place ASEAN at the centre of Indo Pacific but also call for others countries presence like US, Australia etc.

Why India Japan is anchoring for Indo Pacific?

- **Key to Global security-**The region is home not only to the world's fastest-growing economies, but also to the fastest-increasing military expenditures and naval capabilities, the fiercest competition over natural resources, and the most dangerous strategic hot spots.
- **The convergent economic and strategic imperatives-** What China is doing in Indo pacific has been a continuous concern for both the countries. It is disturbing the regional order through an expansionist behavior.
- **Maritime security concern-** Indo-pacific is both strategic as well as an economic domain comprising important sea-lines of communication that connect the littorals of the two oceans. An open and free indo pacific is need of the hour for trade and cooperation.

Areas of Cooperation

- **Increased Economic Cooperation-** The biggest take away was the \$75 billion currency swap that Japan Offered to India 50 percent higher than the last swap.
 - Both appreciated the progress made under Comprehensive Economic Partnership Agreement (CEPA) signed in 2011 as it has helped in boosting bilateral trade.
 - Japan had pledged Rs 33,800 crore in government and private sector investments.
 - Japan has been one of the biggest sources of investment flows into India, accounting for \$28.16 billion in FDI between April 2000 and June 2018.
- **Connectivity through Huge Infrastructure projects**
 - Within India- Japan has been a leading financial donor in the form of ODA (Official Development Assistance) to India.
 - ✓ It continues to maintain a high degree of interest and support for India's mega infrastructure

projects like the Delhi-Mumbai Freight Corridor, Delhi-Mumbai Industrial Corridor, Chennai-Bangalore Industrial Corridor and the Ahmedabad-Mumbai High Speed Rail system. The joint statement underscores the importance that Japan attaches to these projects.

- ✓ **North East integration-** India's Act east policy has North east development at its core. Japan promises to undertake several projects in the region under north East Forum. It has security (chicken neck corridor) and developmental implications for India.
- **Outside India-** Asia-Africa Growth Corridor (AAGR) announced in 2017 and joint projects in some third countries like Bangladesh, Myanmar, and Sri Lanka and in Africa as well will be taken jointly.

History of ties

- In the year 2000 the first-ever visit of an Indian defense minister to Tokyo and the declaration of a "global partnership."
- A series of reciprocal prime ministerial visits peppered the following years, with a "strategic and global partnership" inaugurated in 2006, a "Quadrilateral Initiative" in 2007.
- A joint declaration on security cooperation in 2008 (Japan-India relations are rooted in their similar perceptions of the evolving environment in the region). An announcement of their "fundamental identity of values, interests and priorities," alongside initiation of a "2+2" dialogue of foreign and defense ministers, was made in 2010.
- Unprecedented Japanese arms sales to India were put on the table in 2013, Tokyo returned to the U.S.-India Malabar naval exercises in 2014 after a long absence, an agreement on joint research and development of defense equipment was reached in 2015, and a landmark civil-nuclear deal was signed last year.

Liquidity Boost

WHAT IS CURRENCY SWAP:

One country exchanges its national currency for that of another or even a third one

INDIA-JAPAN SWAP:

India can acquire yen or dollars from Japan up to \$75 billion in exchange for rupees. The exchange has to be reversed after an agreed period

TERMS OF AGREEMENT:

The facility is entered into between central banks of two countries. The terms of the swap and its cost are also included. The exchange rate is typically fixed for a transaction. The borrowing bank pays interest for use of funds

How Does It Help

RBI's \$393-billion chest gets a one-shot \$ 75 billion boost

There is no immediate cost; only when an amount is drawn

Short-term liquidity mismatches can be met quickly

It improves market sentiment, curbs speculative pressure on the rupee

Foreign investors will draw comfort from the arrangement

- **Defence ties-** **Quadrilateral Security Dialogue** is a strategic dialogue between India, United States, Japan and Australia will be carried out.
 - Trilateral naval exercise called **Exercise Malabar** involving the United States, Japan and India will be carried on continuous basis.
 - Till now India and Japan had a **2+2 dialogue** at the secretary-level now they decided to have a 2+2 dialogue mechanism between Defence and Foreign ministers. This is aimed at giving political muscle to the existing diplomatic, security and defence cooperation. Both are concentrating on sharing Japanese defence technology with India.
 - They announced the commencement of negotiations on an Acquisition and Cross-servicing Agreement. This agreement, as and when it comes into effect, would enable Japanese ships to get fuel and servicing at Indian naval bases.
- **Global Partnership-** They will support each other at UNSC, climate, disaster risk management, SDG's etc.

Weaknesses in the relation

- In spite of CEPA India Japan trade it has not produced the anticipated results. In 2011-12, the total volume of the bilateral trade was \$18.43 billion, but it declined to \$13.48 billion during 2016-17.
- The defence technology sharing is still a thorn. The US-2 amphibian aircraft has been on the back burner.
- Both have diverging interest with respect to Regional Comprehensive Economic Partnership.
- Both countries do not have a specific China policy.
- India needs to strengthen its naval power vis-à-vis China and hasten its pending projects in the Indian Ocean.

Way Forward

Both need to work on trade, defence and regional issues. A strong Indo- Japan will arrest the inconsistency being witnessed in the region thus contributing to peace and prosperity in the region and the world.

2.2. INDIA-RUSSIA RELATIONS

Why in News

Russian President Vladimir Putin recently visited India for the 19th Annual Bilateral Summit in New Delhi.

State of India Russia Relations

Cold war period lay the foundation of the Indian Russian relations especially the signing of India Russia Peace and Friendship treaty of 1971. For India, Russia has been at the fulcrum of its strategic interests which it manifested by inferring special and privileged strategic partnership status to this relation. The relation between the two has been one of 'Multidiverse partnership', highly influenced by their defence relations. Various aspects of their Multidiverse partnership include-

- **Defence partnership-** For India, Russia remains the **sheet anchor of India's security policy**. The defence ties, one of the highly influential aspect of their relation, rest on 3 features of technology transfer, joint development, marketing & selling and export of equipments, an agreement nonexistent with any other country. This arrangement has provided significant enhancement to India's indigenous defence manufacturing.
 - For example, besides providing us a range of equipment from tanks to fighter aircraft and frigates, the Russians have helped us perfect our ballistic missiles and build a ballistic missile submarine. They have leased us a nuclear attack submarine, and are a crucial partner in the ongoing BrahMos program.
- **Economic Relations-** It is an important pillar of the relations yet there remains a lot of scope to improve it further. India and Russia are exploring various ways for enhancing bilateral trade.
- **Energy Security-** In Energy sector Russia has built nuclear reactors in India (kudankulam reactors), adopted strategic vision in nuclear energy, offered oil, gas and investment opportunities in the fuel sector of Russia e.g. Sakhalin I etc.
- **Space technology-** India and Russia have a four-decade strong relationship in the field of space. The former Soviet Union launched India's first two satellites, Aryabhata and Bhaskar. It has provided India Cryogenic technology to build heavy rockets.
- **Regional balancing-**Russia is more inclined to align itself with India's interests. It has supported India on Kashmir. The two shared the opposition to Taliban rule in Afghanistan. Russia is India's solution to the China problem. It has observed a self imposed moratorium in selling offensive weapon to China. Also it has maintained an arms distance from Pakistan.
- **International standing-** Russia has supported India's bid for permanent seat in UNSC. It has been favoring Indian entry to Nuclear Supplier Group. In international grouping it sponsors India's membership e.g. Shanghai Cooperation Organization. Also, both are members of important organizations like BRICS.

- **Cultural Relations-** This is one the crucial aspects of cooperation between the two. From people to people contacts (through programs like 'Namaste Russia') to sharing educational brilliance of both the countries through institutes like Jawaharlal Nehru Cultural Centre, both the countries have had good cultural links.

India Russia relations have remained close but they have lost intensity of India-Soviet relation.

Recently, we have seen a definitive decline in India Russia Relation.

S-400

- The Russian-built S-400 Triumf — identified by NATO as the SA-21 Growler — is the world's most dangerous operationally deployed modern long-range surface-to-air missile system.
- It is considered much more effective than the Terminal High Altitude Area Defense system developed by the US.
- The S-400 is a mobile system that integrates multifunction radar, autonomous detection and targeting systems, anti-aircraft missile systems, launchers, and a command and control centre.
- It can be deployed within five minutes, and is capable of firing three types of missiles to create a layered defense.
- It can engage all types of aerial targets including aircraft, unmanned aerial vehicles, and ballistic and cruise missiles within a range of 400 km, at an altitude up to 30 km.

Why this downturn?

- **Changing Geopolitical Order-** With rise of China, America see a threat to a global liberal order it created. Thus America is reasserting itself by dismantling this order through an America first policy. India is reacting to this change by adopting an enhanced partnership with US as China is becoming a real threat in the neighbour. For Russia it has been a period of great hostility with West, thus pushing it to align with China.
- **Defence partnership-** India has been recently diversifying its defence relations with US, Israel etc. Russia's share of Indian defense imports fell from 79 percent between 2008 and 2012 to 62 percent between 2013 and 2017. India withdrew from Russia's fifth-generation fighter aircraft project because of delays and differences over cost, technologies and flexibility for future upgrades. India has signed logistic agreements like LEMOA, LSA with US. India US has seen enhanced interoperability between the two militaries a result of agreements and exercises between the two. India Russia relation lacks this aspect.

- **One Dimensional Trade**-Trade has been one-dimensional i.e. defence based. Despite a 42 percent boost from the previous year, trade still only touched \$10.7 billion in 2017-18 — compare that to India's trade with China (\$89.7 billion), the United States (\$74.5 billion), or even Germany (\$22 billion). There are a number of issues that hinder India-Russia trade – connectivity issues, distance, weak banking links, cumbersome regulations on both sides and Russia's restrictive visa regime.
- **Regional Fallouts**- Russia's developing relationship with Pakistan has got under India's skin. Driven in part by concerns about Afghanistan, Moscow's diplomatic and military exchanges with Islamabad have witnessed an uptick. Russia and Pakistan conducted a military exercise in September 2016, reportedly in disputed territory. Moreover, Pakistan and Russia have since formed a joint military consultative committee and signed a military training agreement. Moscow has also sold attack helicopters to the Pakistani military.
 - Russia is showing inclination towards Taliban in Afghanistan while India continues to have concerns about the group.
 - Russia's partnership with China has further complicated its relations with India. Despite assurances to the contrary, Moscow has sold advanced military technology to Beijing. It has endorsed China's One Belt One Road and has urged India to overcome its objections to it. There has also been concern about Moscow leaning toward Beijing in forums like the BRICS.

Amidst this came the much-awaited Summit between India Russia which has more or less tried to arrest the downturn in the relation.

What has this summit achieved?

- **Re-established the trust and cooperation**- This meet along with an informal meeting at Sochi has regained the mutual trust, confidence and close understanding of each other's position. Both countries have pledged to cooperate and converge on all major issues which are essential in rebuilding the multi polar world order.
- **Reinforced Defence**-The major breakthrough was the materializing of the S-400 deal despite threats of sanctions by US under the Countering America's Adversaries through Sanctions Act (CAATSA). It's the biggest arms deal in recent times. Both sides realized that Military and Military-Technical cooperation is essential to their strategic partnership. The meeting of the Indian-Russian Intergovernmental Commission on Military-Technical cooperation in December 2018 is a step to increase this cooperation. The continuation of INDRA Exercise, the Military Industrial Conference and High-Level Committee on Cooperation in High Technologies (2017) will bolster the cooperation between the militaries and industry.

Breathing new life into trade

- Both countries evaluated the two way USD 30 billion investment goal to be achieved by 2025. In 2017 trade between both countries increased by 20%. Both the sides agreed to actively promote joint projects in third countries in sectors such as railways, energy and others.
- In 2018 there will be a first meeting of Strategic Economic dialogue between NITI Aayog and Russian ministry of economic development. A consultation on the Free Trade Agreement between the Eurasian Economic Union and its member states, on one side, and India will start. A MoU between National Small Industries Corporation of India and the Russian Small and Medium Business Corporation was signed in order to give a fillip to small and medium industries.
- For increasing connectivity both sides called for the development of **International North South Transport Corridor (INSTC)**. Iran, India and Russia transport links will be explored to increase connectivity. The early launch of the Green Corridor project aim at the simplification of customs operations in respect of goods being transported between India and Russia. Also, there are talks of the signing of an **FTA between Indian and the Eurasian Economic Union (EaEU)**.
- Interstate ties will be promoted like Assam and Sakhalin etc and participation by regional delegations in major events like Saint Petersburg International Economic Forum, Eastern Economic Forum and Partnership/Investment Summits and also welcomed the intention to organize and hold the **India-Russia interregional forum**.
- **A joint Declaration** – "India-Russia Economic Cooperation: The Way Forward was signed. Also the decision to hold the first ever India-Russia Start-Up Summit in December. The idea to launch an online portal that would enable startups, investors, incubators and aspiring entrepreneurs of both countries to interact and provide relevant resources to expand and enable globalization of start-ups is promoted.

International North South Transport Corridor

- It is a multimodal network of land and sea routes for moving freight between India, Iran, Afghanistan, Armenia, Azerbaijan, Russia, Central Asia and Europe.
- Major objective is to improve trade connectivity between the connecting cities (countries).
- It is expected to substantially reduce time taken and cost for transport of goods between India and Eurasia once fully functional and increase economic activities between India and the resource-rich Russia as well as markets of Europe.

Strengthening Energy and science & technology

- Both countries aimed at widening the energy relations by strengthening the nuclear energy and also diversifying it to hydro, renewable energy, piped gas, LNG, oil etc.
- Both sides will cooperate in development of oil in Russia including its arctic shelf and joint development of projects on the shelf of the Pechora and Okhotsk Seas.
- Cooperation is promoted in India's ongoing investment in Vankorneft and Taas-YuryakhNeftegazdobycha in Russia and the participation of the PJSC Rosneft oil company in the Essar Oil capital.
- Both sides expressed their interests in Science and technology. They aimed to increase academic, research and development work between both the countries. Russia will support India in its first man mission to space i.e. Gaganya.

Other Areas of Cooperation

- **International Cooperation-** Respect for International Law and multilateral trade-Both sides reaffirmed "equality, mutual respect and non-interference as universally acknowledged norms of international law basis for a just , equal and multipolar world order. Both sides favored strengthening of multilateral trade regimes.
- **Regional Balance-** In Afghanistan both countries sided a Afghan govt led peace process supported through Shanghai Cooperation Organization, Moscow Format and joint developmental activities etc. On Syria and Iran both political solutions based on UNSC resolution 2254 and underlined the importance of Joint Comprehensive Plan of Action in Iran.
- **Terrorism and chemical war-** They rejected the possible arms race in the space. Efforts and initiatives are aimed at preserving the role of the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction, and preventing the politicization of the activities of the Organization for the Prohibition of Chemical Weapons. Both sides called for importance of adopting the Comprehensive Convention on International Terrorism, pending in the United Nations.
- **Reiterated support-** Russia has backed India's entry in NSG and UNSC permanent membership. Both will advance low carbon economy and promote Sustainable Development Goals. They will establish Regional Security architecture that provides equal and indivisible security to all countries in Asia and in the regions of Pacific and Indian Oceans. BRICS, SCO, G20 etc. will be strengthened together.

Conclusion

India Russia today needs each other more than ever in this changing geopolitical landscape and both has to learn the art of balancing in order to sustain the newly found bonhomie.

2.3. AFRICAN CONTINENTAL FREE TRADE AREA

Why in news?

African countries are set to launch the African Continental Free Trade Area or AfCFTA, the biggest free trade agreement in the world since the World Trade Organization.

Where do India Africa Relations trade relations stand today?

- Since 2000, the economic cooperation between India and Africa has increased, helped by the **India-Africa Forum Summit (IAFS)** process.
- Over the years we are witnessing robust trends in trade relations, wherein bilateral trade has increased five-fold in a decade – **from \$11.9 billion in 2005-06 to \$56.7 billion in 2015-16**.
- However, the recent trends show a steady decline in the India-Africa trade from 2013 to 2017. In 2014-2015, the total India-Africa trade stood at US\$71.5 billion, which went down to US\$56.7 billion in 2016-2016 and has further dropped to US\$51.96 billion in 2016-2017.
- Also, India's investment has been witnessing a slump since 2013 i.e. **\$14 billion in 2016-2017, from \$16 billion in 2011-12**.
- The increasing **Mega Regional Trade Agreements like RCEP etc.** are negatively impacting India-Africa trade. Africa's exports to India will decrease because there will be erosion of preferences and increased competition in the MRTA markets.

- India's exports to the African countries have been majorly dominated by petroleum products. Therefore India needs to diversify its export basket.

How India-Africa trade relations can benefit from the AfCFTA?

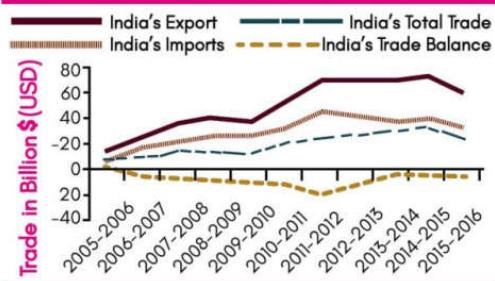
- One Stop Trade Bloc-** AfCFTA will provide a number of opportunities for the Indian firms and investors to tap into a larger, unified, simplified and more robust African market. AfCFTA is projected to **increase intra-African trade by 52.3 percent by 2022**; from 2010 levels. It is critical for India to view Africa not just as a destination for short-term returns but as a partner for medium and long-term economic growth. India's exports to Africa could increase by US\$4.3 billion (or 10 percent) by 2022 if AfCFTA is established.
- Geo-Strategic advantage-** Increased engagement in terms of trade between India and Africa can balance out increasing Chinese engagement in Africa. It can boost India's economic relations with Africa which is developmental partnership based unlike Chinese extractive engagement.
- Geo economic gains-** India hugely depends on energy resources for energy security. Africa is huge resources and untapped potential. A trade bloc like AfCFTA can provide an unlimited opportunity to invest and use these resources. More engagement will spill to the **blue economy** as potential and strategic area of future cooperation.
- Decline of WTO-** With WTO declining a largest trade bloc like this is need of the hour where India can actively engage, diversify and develop along. Africa and India suffer from similar problems of unemployment, poverty, malnutrition, hunger; illiteracy etc thus can work together on one platform to fight these issues.
- Complimenting other steps for better trade-** India is also working on other projects for improving economy and trade with the region like Asia Africa Growth Corridor. Engaging with AfCFTA with enhance and compliment such efforts and benefit both the regions in the long run.

- The African Continental Free Trade Area (AfCFTA)** is the result of the African Continental Free Trade Agreement among all 55 members of the African Union. African heads of state gathered in Kigali, Rwanda in March 2018 to sign the proposed agreement.
- The Continental Free Trade Area (CFTA)** is a continent-wide free-trade agreement brokered by the African Union (AU) and initially signed on by 44 of its 55 member states in Kigali, Rwanda on March 2018.
- The United Nations Economic Commission for Africa estimates that the agreement will boost intra-African trade by 52 percent by 2022.
- The proposal will come into force after ratification by 22 of the signatory states

Potential Gains

- A bigger and integrated regional market for African products.
- Improved conditions for forming regional value chains (RVCs) and integration to global value chains (GVCs).
- Elimination of challenges associated with multiple and overlapping trade agreements.

INDIA-AFRICA TOTAL TRADE



2.4. EUROPE'S ANSWER TO CHINA'S BELT AND ROAD

Why in News?

European Union (EU) recently came out with a document outlining the bloc's vision for a new and comprehensive strategy to better connect Europe and Asia.

More on news

- The EU will combine a principled approach to connectivity and recognition that Asia, which is home to very diverse countries in terms of economic models and level of development, with concrete action based on three strands:
 - Creating transport links, energy and digital networks and human connections;
 - Offering connectivity partnerships to countries in Asia and organisations;
 - Promoting sustainable finance through utilising diverse financial tools.
- It will offer a different approach to that taken by Beijing with its flagship Belt and Road Initiative (BRI). The EU emphasis is on sustainability, proposing that investments should respect labour rights, not create political or financial dependencies, and guarantee a level playing field for businesses.
- A better-connected Europe and Asia through transport links, energy, human and digital networks will strengthen the resilience of societies and regions, facilitate trade, promote the rules-based international order, and create avenues for a more sustainable, low-carbon future.
- The new strategy will give Asian and European states a much clearer idea on the basis of which the EU wishes to engage with them, and what they can expect.

2.5. 12TH ASIA-EUROPE MEETING

Why in News?

The 12th Asia-Europe Meeting (ASEM12) was held in October 2018 in Brussels, Belgium. Discussions focused on the theme "Europe and Asia: Global Partners for Global Challenges".

About ASEM

- It is an intergovernmental process established in 1996 to foster dialogue and cooperation between 51 Asian and European countries plus two institutional partners (the EU and the Association of South East Asian Nations - ASEAN). India joined the forum in 2008.
- The first summit was held in Bangkok, Thailand. It also seeks to strengthen the relationship between regions and spread peace, respect and equality.
- It aims at promoting a more global vision among European and Asian policymakers by allowing them to exchange views on political, economic, financial, social and cultural issues. ASEM also aims at stimulating a wide range of contacts and dialogue between the two regions on topics such as education, social protection and employment, and co-operation on the protection of cultural heritage.

2.6. US TO WITHDRAW FROM RUSSIA MISSILE PACT

Why in news?

US has recently announced that it will withdraw from the Intermediate-Range Nuclear Forces (INF) Treaty.

Why US want to withdraw?

- **Russian Violation-** Russia has breached the treaty as it has developed an intermediate-range ground-based cruise missile, known as 9M729, or SSC-8. With this Russia can launch a nuclear strike on NATO countries at very short notice.
- **Military Imbalance vis-a-vis China-** China is developing and deploying intermediate range missiles as it is not under the purview of the INF. China's Dong Feng-26 ballistic missile, which has a range of 3,000-4,000 km, was deployed in 2015, allowing it to target most US bases in the Pacific.
- **Weakness of the treaty-** INF like many arms control treaty faces enforcement lacunas as parties take advantage of absence of verification process.

Intermediate-Range Nuclear Forces Treaty (INF)

- It is a cold war treaty between the two super powers signed in 1987.
- The INF treaty prohibits US and Russia from possessing, producing or test-flying ground-launched cruise missiles with ranges of 500 to 5,500 kilometers.
- The cold war era treaty also covers all land-based missiles, including those carrying nuclear warheads.
- However, it does not cover air-launched or sea-launched weapons.

What it means for the world?

- **American push for unipolar world-** America under its American first policy is trying hard to dismantle the very multipolar world system it created for its hegemony. As it has worked more in the favor of China vis-à-vis US. Withdrawing from the cold war arms treaty is one such way to re-establish American supremacy.
- **Restarting Arms race-** The global nuclear arms control architecture is crumbling today as it is no longer able to respond to the underlying shift in global power realities. U.S and Russia are more or less equally responsible for reneging on their arms control promises. Now U.S and Russia can build their weaponry unhindered hence encouraging proliferation.
- **Resurgence of European Rivalry-** The day INF Treaty is gone; Russia will find itself completely unbound in its efforts to reshape the conventional and nuclear military balance in Europe. Russian land-based missile systems are also mobile, and can be readily transported from the far eastern border with China to the European theater.

Implications for India

- **Asia pacific new war theatre-** If the US deploys a new INF in Asia, to deter China, Beijing is bound to react. Asia will go in intense competition have implications for Indian national security.
- **New technological requirements-** The focus of a potential new arms race will be less on traditional nuclear armed missiles, but precise hypersonic equipped with conventional warheads. Russia and China have already invested in the development of hypersonic systems.
- **Impact on India-Russia partnership-** India's traditional defence cooperation with Russia may come under intense US scrutiny and pressure as US conflict with Russia deepens e.g. S-400 missile sanctions. Also Russia- China may be forced to work together casting shadow on Russian- India defence ties.

Thus, India needs to revise its national security policy and diversify its defence ties.

Conclusion

Geopolitical developments, emergence of new technologies and the declining domestic political support has led to the failure of arms control regime. The need of the hour is to arrest this failure. Arms control regimes have to become comprehensive, inclusive, transparent, verifiable and responsive in order to protect the international world order from collapsing.

History of Arms Control treaties

Before 1945

- The industrial revolution has led to the increasing mechanization of warfare, as well as rapid advances in the development of firearms.
- The **1817 Rush–Bagot Treaty** between the United States and the United Kingdom was the first arms control treaty of what can be considered the modern industrial era.
- The Hague Convention of 1899 that led to rules of declaring and conducting warfare as well as the use of modern weaponry, and also led to the setting up of the Permanent Court of Arbitration.
- After the World War I, the League of Nations was set up which attempted to limit and reduce arms.
- The 1925 Geneva Conference led to the banning of chemical weapons (as toxic gases) during war as part of the Geneva Protocol.

1945 onwards

- After World War II, the United Nations was set up as a body to promote and to maintain international peace and security.
- The International Atomic Energy Agency **was set up in 1957** to promote peaceful uses of nuclear technology and apply safeguards against the diversion of nuclear material from peaceful uses to nuclear weapons. The **1968 Nuclear Non-Proliferation Treaty** was signed to prevent further spread of nuclear weapons technology to countries outside the five that already possessed them.
- The Strategic Arms Limitation Talks (**SALT**) between the United States and Soviet Union in the late 1960s-1970s led to further weapons control agreements.
- The **1993 Chemical Weapons Convention** was signed banning the manufacture and use of chemical weapons. **The Strategic Arms Reduction Treaties were signed**, as START I and START II, by the US and Soviet Union, further restricting weapons.
- The Comprehensive Test Ban Treaty was signed in 1996 banning all nuclear explosions in all environments, for military or civilian purposes, but it has not entered into force due to the non-ratification.
- The **United Nations** is preparing for entry into force of the Arms Trade Treaty, which has been ratified by 89 nations, pending ratification by Russia and China and United States.

2.7. INTERNATIONAL SOLAR ALLIANCE (ISA)

Why in news?

The First Assembly of International Solar Alliance (ISA); the 2nd IORA Renewable Energy Ministerial Meeting and the 2nd Global Renewable Energy Investment Meeting and Expo, (REINVEST- 2018) was held in India.

Highlights of the session

- Indian government pitched for **one world, one sun, and one grid** concept to enhance use and production solar energy as an alternate to conventional energy.
- As many as 21 countries in the Indian Ocean Rim Association (IORA) today adopted **the Delhi Declaration on Renewable Energy in the Indian Ocean Region**
- **The Delhi Declaration on Renewable Energy in the Indian Ocean Region** calls for collaboration among IORA member states in meeting the growing demand for renewable energy in the Indian Ocean littorals, development of a common renewable energy agenda for the Indian Ocean region and promote regional capacity building.
- The declaration also calls for promotion of technology development and transfer, strengthening of public private partnerships in renewable energy and collaboration among IORA member states and the member nations of the International Solar Alliance (ISA).

Analysis

The following aspects of India's participation in ISA augur well for India's leadership role:

- The opportunity to position itself in a key global leadership role in the arena of climate change, Renewable Energy and sustainable development.
- It also shows India's commitment to enable developing countries to make the transition to a low-carbon economy and enable the Global South to move to a low-carbon development path.

About ISA

- It was launched at Paris Climate Change Conference in 2015 by the President of France and the Prime Minister of India.
- It is a multi-country partnership organization with membership from solar resource rich countries between the two tropics, where the global community can make a positive contribution towards increasing the use of solar energy.
- It has now been decided to extend the membership of the alliance to all the UN member states.
- Each Member shares and updates, for those solar applications for which it seeks the benefits of collective action under the ISA.

Economy

3.1. POVERTY AND SHARED PROSPERITY 2018

Why in news?

World Bank has released its report on global poverty 'Poverty and Shared Prosperity 2018: Piecing Together the Poverty Puzzle'.

Notable Observations

- The percentage of people living in extreme poverty (less than \$1.90 a day) globally fell to a new low. In the 25 years from 1990 to 2015, the extreme poverty rate dropped an average of a percentage point per year – from nearly 36% to 10%. But the rate dropped only one percentage point in the two years from 11% in 2013 to 10% in 2015.
- More recently, **South Asia** has made impressive inroads against extreme poverty, helping to reduce the global rate further. The number of poor in South Asia dropped to 216 million people in 2015, compared to half a billion in 1990. Between 1990 and 2015, the world experienced a 25-percentage point drop in extreme poverty against a 35 percentage-point drop in South Asia. This decline in extreme poverty is much faster than in the rest of the world.
- **Extreme poverty is becoming more concentrated in Sub-Saharan Africa** because of the region's slower rates of growth, problems caused by conflict and weak institutions, and a lack of success in channeling growth into poverty reduction.
- **About half of the world's countries now have poverty rates below 3 percent**, but the report finds that the world as a whole is not on track to achieve the target of less than 3 percent of the world living in extreme poverty by 2030.
- These contrasting regional poverty trends have two important implications:
 - First, the primary focus of the international community's efforts to eliminate the worst forms of deprivation must remain firmly in Africa and those few other countries elsewhere with very high poverty rates.
 - Also, the plight of billions of people living above US\$1.90, who are still very poor by the standards of their own societies, should be taken care of.

Shared prosperity

- It is defined as the growth in the average income or consumption of the poorest 40 percent of the distribution in the population (the bottom 40).
- It is examined by country rather than globally.
- **Introduced as one of two twin goals by the World Bank in 2013**, along with ending extreme poverty, fostering shared prosperity embodies notions of economic growth and equity.
- Irrespective of the prevalence of extreme poverty, this measure is meaningful as a **gauge of how well prosperity is shared** within each country.
- The **shared prosperity premium** captures whether the bottom 40 are receiving a larger or smaller share of the overall pie.

New Measures of Poverty

To expand the understanding of poverty as a complex, multifaceted problem and identify pockets of people who are impoverished but have remained unnoticed, the World Bank introduces **new measures of poverty**. The new measures can enhance policy dialogue, particularly in middle-income countries, where extreme poverty is less prevalent, but where the higher poverty lines and the new multidimensional poverty measure reveal there is still much work to be done.

1. **A new multidimensional poverty measure:** Similar to Global Multidimensional Poverty Index, it recognizes that access to education, health, electricity, water, sanitation, and physical and environmental security are critical for well-being.
 - It provides a global picture using comparable data across 119 countries for 2013 (representing 45 percent of the world's population) combining **consumption or income** with measures of **education** and access to **basic infrastructure services**.
 - China and India are not a part of this exercise because of data availability.
2. **New Poverty lines of US\$3.20 and US\$5.50 per person per day**, expressed in 2011 PPP. The value of these lines is derived from the typical poverty line in lower- and upper-middle-income countries, respectively.
 - **Why higher set of Poverty Lines?** Majority of people and most of the world's poor now live in middle-income countries. To reflect this shift and the rise in what may constitute basic needs for many people new measures are introduced. These higher-valued poverty lines reflect social assessments of what defines minimum basic needs in countries at these income levels.
 - **Poverty estimates on new sets of Poverty Lines-** Nearly half the world (46 percent) lives on less than US\$5.50 per day. Sub-Saharan Africa leads with 84.5% of its population living under \$5.5 a day followed

by South Asia (81.4%).

3. The Societal Poverty Line (SPL) reflecting how monetary definitions of poverty at the national level vary with the overall income in a society.

- **What is Societal Poverty Line?** The SPL is a combination of the absolute IPL and a poverty line that is relative to the median income level of each country. Specifically, it is equal in value to either the IPL or US\$1.00 plus half of daily median consumption in the country, whichever is greater.

- **Features of SPL**

- i. The value of the SPL will never be less than the IPL. But, after a certain point as countries get richer, the value of the SPL will increase as the consumption level of the median individual in that country increases.
- ii. Although the SPL can change in real terms over time, it is constant in value across countries that are at the same level of median consumption or income. Because the SPL is constructed to reflect, on average, national poverty lines at different levels of median consumption or income, it provides a useful measure of global poverty that aligns well with national assessments of poverty.
- iii. The proposed SPL is also relevant to SDG target 10.2 aimed at the social, economic, and political inclusion of all.

- **Poverty on the basis of SPL**

- i. **Present level of SPL Poverty:** Number of people who are poor stood at 2.1 billion (28 percent) as of 2015, almost three times more than those living under the US\$1.90 level (10%).
- ii. **Trend:** The percentage of societal poor in the global population has fallen steadily since 1990, but still at a much slower rate than the decline of extreme poverty. In 1990, the rate of societal poverty (45 percent) was about one-fourth greater than the rate of extreme poverty (36 percent).

4. Individual Level of poverty looking into intra-household inequality among various age-groups and gender.

- **Why to measure individual level of poverty?** The common approach assigns all individuals within a household to the same poverty status as the household. However, this masks potential differences in poverty among household members. Ignoring these decreases the effectiveness of common approaches to targeting poverty reduction interventions and the take-up of these interventions because they do not address the needs and constraints of the poorest individuals.
- In the absence of poverty data on individuals, perceptions about differences in poverty by sex and age are rarely supported by evidence.
- More reliable poverty estimates on individuals would facilitate a better understanding of the characteristics of poverty and its intergenerational transmission, the interventions appropriate for different types of individuals, and the more effective targeting of social protection and broader development programs. Such programs often rely on approaches targeted to households but may fail to reach potentially poor

Why Societal Poverty Line (SPL)?

- The introduction of this measure is based on recommendations of the Atkinson Commission on Global Poverty.
- The majority of the world no longer lives in low-income economies. For many countries, the social relevance of the International Poverty Line (IPL) has lessened over time as their economies have grown. This is largely due to the observance that needs change as the world becomes richer.
- As countries grow richer, uniformity in the consumption bundle may not result in the same level of well-being everywhere. Fixing the consumption bundle could result in unequal assessment of people across the world in terms of their ability to function in society in a socially acceptable manner.
- What constitutes a basic need can vary depending on a country's level of consumption or income. In a poorer country, for example, participating in the job market may require only clothing and food, whereas someone in a richer society may also need internet access, a vehicle, and a cell phone. The cost of performing the same function may differ across countries depending on their overall level of income.
- The concept of poverty itself is dependent on one's social circumstances. What is a luxury in one society could be a necessity in another. Even if minimum physical needs are met, people cannot be said to lead flourishing lives if they are not able to conduct themselves with dignity in the society in which they live.

Average Societal Poverty Lines (in US\$) based on income group of Countries

Income group	1990	1999	2008	2013	2015
Low income	2.1	2.1	2.1	2.2	2.2
Lower-middle income	2.2.	2.2	2.5	2.8	2.9
Upper-middle income	3.0	3.0	4.4	5.4	5.8
High income	16.4	18.2	20.4	20.5	21.2

Gender and Socio-emotional Dimensions of Poverty- It highlight the importance of non-monetary dimensions, access to services, and gender norms.

- While lack of financial resources and the inability to meet basic needs are central, both women and men frequently associate these needs with their direct consequences in terms of physical and mental health. Shame, fear, depression, worry, and anger emerge as integral components of the experience of poverty.

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| <ul style="list-style-type: none"> beneficiaries if many of these live in households not identified as poor. ○ Household composition, particularly the presence of dependents and the type of earners, influences gender differences in poverty over the life cycle. ○ Intrahousehold differences in consumption and poverty are widespread. In most cases, women and children are allocated a smaller share of the households' resources than men. ○ The multidimensional poverty measure is de facto only partially individualized; only 30 percent of deprivations are measured among individuals. Multidimensional poverty is more prevalent among women than among men in all countries, with the largest gender gap in Iraq (54 percent versus 38 percent). A significant gender gap in multidimensional poverty is also found in India. | <ul style="list-style-type: none"> ● Poverty is also relational. As a group, people living in poverty experience oppression, exploitation, humiliation, and the denial of rights, including the denial of rights to health care and education. ● As individuals, they experience social isolation, stigma, and discrimination. Beyond their intrinsic importance, these factors also contribute to a lack of social and political voice and to relative powerlessness, all often resulting in social exclusion. <p>Both women and men emphasize these dimensions, but they experience them differently.</p> <ul style="list-style-type: none"> ● Gender roles mean that women feel stress and stigma in the context of care and family responsibilities under tightly constrained domestic budgets. Men can feel emasculated if they cannot fulfill their breadwinning role. ● Whereas women may face sexual exploitation and gender based violence, especially as domestic workers, men face exploitation and discrimination as casual laborers. ● Children find themselves socially excluded at school, singled out if they are unable to afford the totem items of their peers. They are often embarrassed to invite friends home to their substandard housing. ● Gender roles imply that lack of proximate clean water affects more the time and lives of women (and children) who are responsible for fetching it, cooking, and cleaning. |
|--|--|
- **Major observations on Individual level of Poverty**
- Women and children are often disproportionately affected by poverty, but with considerable variation across countries. Worldwide, 104 women live in poor households for every 100 men. However, in South Asia, 109 women live in poor households for every 100 men.
 - Women in poorer countries often withdraw from the labor force and lose their earning potential when they reach reproductive age. **The gender gap in poverty rates is largest during the reproductive years** when care and domestic responsibilities, which are socially assigned to women, overlap and conflict with productive activities. It is well documented that female labor force participation declines during women's reproductive years, particularly if they have young children.
 - **Resources are not shared equally within poor households**, especially when it comes to more prized consumption items. Evidence also shows complex dynamics at work within households that go beyond gender and age divides. For example, a woman's poverty level may be related to her position as mother versus wife of the household head.
 - **Nearly one child in five lives in a poor household**. Children are twice as likely as adults to live in poor households.

3.2. FIXED-TERM EMPLOYMENT RULES

Why in news?

The Union Ministry of Labour has urged States to issue orders permitting fixed-term employment (FTE) across all industries.

Background

- As per the Industrial Employment (Standing Order) Act 1946, Fixed-term employment was initially made available only to apparel manufacturing sector in 2016 and then to Footwear manufacturing sector in 2017 through amendments.
- Industrial Employment (Standing Orders) Central (Amendment) Rules, 2018 in March notification allowed all industries to hire workers on contract with a fixed tenure.
- But under the Industrial Employment Act, 1946, the central government can frame rules for industries belonging to the central sphere only i.e. for central PSUs and Private sector units in the civil aviation, banking and finance, telecommunications, insurance, ports, dock, and mines sectors only.
- Also, Labour is a Concurrent List subject and without a Parliamentary ratification, States are not really obliged to follow these orders.
- This created confusion in private sector firms which do not belong to central sphere and prevented them from taking the benefits of this reform.
- In order to plug this gap, the Central Government has asked the states to issue separate notifications for the same.

What is fixed term employment?

- FTE is a contract in which a company hires an employee for a specific period of time.
- The employee is not on the payroll of the company.
- Their payment is fixed in advance and is not altered till the term expires.
- Such contracts are given out for temporary jobs and not for routine jobs. It cannot be used to replace existing employees who are on a long leave.
- Such workers are entitled to all statutory benefits (work hours, wages etc.) available to a permanent worker in the same establishment. However, other benefits such as Provident Fund is not available to them.
- The employers can terminate the contract on certain grounds (fraud, non-performance, etc.) even before the due date. The temporary worker having completed 3 months in service shall get 2 weeks' notice before termination.

Benefits of Fixed-Term Employment:

- Fixed wages and work conditions:** The workers are ensured to have a fixed wage and work conditions from before. This provides them livelihood security for the given period.
- Accountability:** The workers are entitled to have statutory benefits. Therefore, they gain greater sense of accountability from the principal employer.
- Forecast labour costs:** The fixed term contract enables the business to forecast their labour costs. It also provides relief against protests related to salary hikes etc.
- Short term Employment shortage:** During peak seasons, industries face shortage of workers. Fixed-term employment will help them to hire and remove workers according to their requirements without extra legislative burdens. FTEs are particularly useful in executing specific projects, such as in the infrastructure sector, apparel, footwear and sections of the media.
- Commercial Competitiveness:** Due to in-built flexibility in hiring and firing the workers, the business will be able to safeguard its commercial competitiveness through finding suitable employees.
- Work Environment:** It will become better as workers working conditions would be better in terms of working hours, wages etc.
- Middle men:** The role of middle men in providing labour will be minimised henceforth.
- Job Creation:** FTE is expected to boost job creation, provided the cost of capital does not remain so low as to deter labour use.
- Labour Reform:** It can be considered a major labour law reform and a positive step towards ease of doing business as it removes restriction on firing.

Criticism against the move

- **Hire-and-fire:** All central trade unions are protesting against the government's policy of hire-and-fire. Trade unions will go unrecognised by the move.
- **Removal of Safety nets:** The government has enabled the employers to sidestep even the minimum protection offered by the Factories Act 1948, Industrial Disputes Act 1947 and Contract Labour (Regulation and Abolition) Act 1970.
- **Undermines Job Regularisation:** Collective bargaining talks for wage increase will not be possible. Business will have no incentive to regularise the jobs.
- **Against the earlier judgments of Supreme court:** The courts have allowed FTE only in seasonal activities. The Supreme Court has ruled earlier that a fixed-term contract worker who had worked for 7 years should be regularised.
- **Industries will be converted into Sweatshops:** The major reason of conflict of workers with management (e.g. in Maruti-Suzuki incident) is common issues of non-recognition of trade unions, temporary workers far outnumbering regular workers and paying them very low wages. The move will encourage the same.

What needs to be done?

- The FTE conditions need to be defined clearly to make them acceptable to both employers and employees.
 - The present rules are silent about the minimum or maximum term of an FTE and the maximum permissible number of consecutive FTEs.
 - In China, a worker employed without an FTE for a year is deemed to be on an open-ended contract. She is considered a permanent employee after two successive renewals.
- The norms should be arrived at in a transparent, consensual manner. Labour reforms will not be politically acceptable in the absence of a better social safety net.
- Countries with flexible labour markets have superior and state-funded health and education facilities.
- Since labour comes under Concurrent list, a suitable and well discussed legislation for FTE should come through Parliament.

3.3. NATIONAL COUNCIL FOR VOCATIONAL EDUCATION & TRAINING

Why in News?

The Cabinet approved the merger of National Council of Vocational Training (NCVT) and National Skill Development Agency (NSDA) into National Council for Vocational Education and Training (NCVET) for improving the outcome of the Skill India mission.

Other recent government initiatives for Skill development

- **Indian Institute of Skills:** The Union Cabinet has approved the setting up of Indian Institute of Skills (IISs) at different locations across the country in Public Private Partnership (PPP) mode.
- **Global Skills Park:** It is an international skilling institute to provide students with international training methods in world class machinery, tools & equipment. The Asian Development Bank (ADB) has approved a \$150 million loan to establish the first Global Skills Park in Madhya Pradesh.

About NCVET

- It will regulate functions of entities engaged in vocational education and training and establish minimum standards for functions of such entities.
- The various **functions of NCVET** includes
 - **Recognition and regulation** of awarding bodies, assessment bodies and skill related information providers.
 - **Approval of qualifications** developed by awarding bodies and Sector Skill Councils (SSCs).
 - **Indirect regulation of vocational training institutes** through awarding bodies and assessment agencies.
 - Research and information dissemination.
 - Grievance redressal.

Benefits

- This institutional reform will lead to **improvement in quality and market relevance of skill development programs** lending credibility to vocational education and training encouraging greater private investment and employer participation in the skills space.
- This in turn will help **achieve the twin objectives** of enhancing aspirational value of vocational education and of increasing skilled manpower furthering the Prime Minister's agenda of making India the skill capital of the world.
- This is also expected to **facilitate the ease of doing business** by providing a steady supply of skilled workforce to the industry and services.

3.4. NATIONAL LEVEL ENTREPRENEURSHIP AWARENESS CAMPAIGN

Why in News?

The Small Industries Development Bank of India (SIDBI) has launched a national level entrepreneurship awareness campaign 'Udyam Abhilasha'.

About Udyam Abhilasha

- The campaign is to promote entrepreneurship in the 115 aspirational districts identified by NITI Aayog. It would create and strengthen cadre of more than 800 trainers to provide **entrepreneurship training to the aspiring youths** across these districts thus encouraging them to enter the admired segment of entrepreneurs.
- SIDBI has partnered with Common service centres, **e-Governance Services India Limited**, a Special Purpose Vehicle, set up by the Ministry of Electronics and IT for implementing the campaign.
- Its **objectives** include:-
 - To inspire rural youth in aspirational districts to be entrepreneurs by assisting them to set up their own enterprise.
 - To impart trainings through digital medium across the country.
 - To Create business opportunities for CSC VLEs.
 - To focus on women aspirants in these aspirational districts to encourage women entrepreneurship.
 - To assist participants to become bankable and avail credit facility from banks to set up their own enterprise.
- **CSC Village Level entrepreneurs (VLEs)** would play the role of catalyst for these aspiring entrepreneurs. It would provide training, support to the aspirants to establish new units by assisting them in availing loans and make them aware about various initiatives of Government of India like **Pradhan Mantri Mudra Yojana** and educate the youths in these districts on **business literacy**.

About the Aspirational Districts Programme

- The 'Transformation of Aspirational Districts' programme aims to quickly and effectively transform the chosen 115 districts, with at least one from 28 states (excluding Goa).
- The broad contours of the programme are **Convergence** (of Central & State Schemes), **Collaboration** (of Central, State level 'Prabhari' Officers & District Collectors), and **Competition** among districts driven by a mass Movement.
- With States as the main drivers, this program will **focus on the strength of each district**, identify low-hanging fruits for immediate improvement, measure progress, and rank districts.
- One of the main elements of the strategy is to **identify selected Key Performance Indicators (KPIs)**, monitor the progress made in these indicators and carry out annual ranking on the incremental progress made. The KPIs chosen are to be district specific.
- For this purpose, 5 sectors have been identified -Health & Nutrition, Education, Agriculture and Water Resources, Basic Infrastructure and Financial Inclusion and Skill Formation.

About SIDBI

- SIDBI set up on 2nd April 1990 under an **Act of Indian Parliament**, acts as the Principal Financial Institution for Promotion, Financing and Development of the Micro, Small and Medium Enterprise (MSME) sector as well as for co-ordination of functions of institutions engaged in similar activities.

3.5. AGRICULTURE CENSUS

Why in news?

The 10th Agriculture Census 2015-16 was released by the Agriculture Ministry.

Key Findings of Provisional Agriculture Census 2015-16 vis-à-vis 2010-11 Agri- Census

Description	2015-16	2010-11	Remarks
Total number of operational holdings	146 million	138 million	Increase of 5.33%. (Share of SC- 11.91%, ST-8.72%)

Total operated area	157.14 million HA	159.59 million ha	Decrease of 1.53%.
Average size of operational Holding	1.08 hectares ha	1.15 ha	Declining average land holding size
Share of female operational holders	13.87 %	12.79 %	Rise in female participation
Small and Marginal holdings (0-2 ha)	86.21 %	84.97 %	Increasing fragmentation of land holdings leading to farmer distress among other farming issues
Semi-medium and medium operational holdings (2-10 ha)	13.22 %	14.29%	
Large holdings (10.00 ha & above)	0.57%	0.71%	
Share in Operated Area			
Small and Marginal holdings (0-2 ha)	47.34%	44.31%	<ul style="list-style-type: none"> • Share of larger land holdings in total cultivated area is declining while smaller holdings on rise. • As per Social groups, share of SC- 8.61%, ST-11.4% • Female share in land holding is rising which is a positive sign
Semi-medium and medium operational holdings (2-10 ha)	43.61%	44.82%	
Large holdings (10.00 ha & above)	9.04%	10.59%	
Females	11.57%	10.36%	

Other Details of report

- The individual, joint and institutional holdings have shown a growth of 5.04 per cent, 7.07 per cent and 10.88 per cent, respectively.
- Out of 36 States/UTs in the country, it was found that 14 States viz. Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Tamilnadu, Telangana, Uttar Pradesh and West Bengal account for about 91.03% in terms of number of operational holdings and about 88.08% in terms of area operated in the country.
- In a total of 146 million operational holdings in the country, the highest number of operational holders belonged to Uttar Pradesh (23.82 million) followed by Bihar (16.41 million) and Maharashtra (14.71 million).
- At all India level, percentage increase in number of operational holdings in 2015-16 as compared to Agriculture Census 2010-11 worked out to 5.33% among states, the highest variation was found in the case of Madhya Pradesh (12.74%) followed by Andhra Pradesh (11.85%), Rajasthan (11.12%), Kerala (11.02%) etc.
- Some states also showed decline in number of operational holdings. The sharpest fall has been in Goa (28.17%) and lowest in Manipur (0.09%). However, **operated area has shown declining trends in most of the states**.
- With an average size of 5ha, Nagaland is home to India's largest farms.

Analysis of the Agri-Census data

- While farms got more fragmented between 2010-11 and 2015-16, **holdings continue to be inequitably distributed**.
- The increase in farm land holdings, a consistent trend since the 1970s, has been slowing down in the past 20 years. In a positive development, there is a **rise in the number of female land holders**, a possible indicator of higher involvement in farm activities. The trend may reflect **migration of men to cities for non-agricultural activities** and also explain slowing down of land division as rural people seek alternate livelihoods.
- The figures show **landholdings have doubled in past 45 years** (from 71 million in 1970-71 to 146 million in 2015-16), resulting in decline in average size of farms by more than 50% — a real worry for policy-makers as this makes agriculture unremunerative for farmers.
- Similarly, there is decrease in the operated area from 159.59 million hectares in 2010-11 to 157.14 million hectares in 2015-16, showing a decrease of 1.53% - it means **diversion of farm land for non-agriculture activities** during the period.
- The number of small holdings in the country has grown in five years, due to fragmentation of land, while that of medium and large holdings have gone down.

Reasons for land fragmentation

- Natural population growth
- Inadequate growth in off-farm employment opportunities to absorb the surplus workforce.
- Rise of nuclear families leading to division of family landholdings
- High indebtedness which leads to selling of a patch of land while repayment

Problems associated with fragmentation of Land holdings

- **Small scale of production:** It inhibits the ability of farmers to reap economies of scale in agricultural operations and invest in mechanisation. It further leads to decline in productivity and thus declining land capability.
- **Low Prices:** Further the small and marginal farmers have low bargaining power, since they have very little marketable surplus and are price takers in the market.
- **Low income:** As per NSSO Survey (2012-13) the median agricultural incomes were about Rs. 19,250 or about Rs 1600 per month in 2012-13.
- **Indebtedness:** As per Economic Survey-2016-17, there is an **inverse relationship** between indebtedness and the size of land holding. In Bihar and West Bengal, more than 80% of agricultural households with marginal landholdings are indebted.
- The existence of a large number of small and marginal farmers, close to 126 million according to the Agri-Census, means it is **challenging for the government's extension arms** to reach them with new technology and farm support schemes.
- Further, these 126 million farmers together owned about 74.4 million hectares of land — or an average holding of just 0.6 hectares each—not enough to produce surpluses which can financially sustain their families, explaining the rising distress in Indian agriculture.
- Overall it makes farmers **prone to all sort of agricultural risks** including Production risks, Climatic risks, Price risks, Credit risks, Market risks, and Policy risks.

Way Forward

- **Scale-up the farms:** There are various ways such as land pooling, land leasing and contract farming etc. All this should be done within proper legal mechanism.
- **Model Land Leasing Law:** NITI Aayog has formulated a Model Agricultural Land Leasing Act, 2016 to both recognize the rights of the tenant and safeguard interest of landowners. A dedicated cell for land reforms was also set up in NITI Aayog.
- **Diversify Agriculture:** Horticulture products must also be included along with traditional wheat and rice farming. Schemes like Mission for Integrated Development of Horticulture (MIDH) and Operation Greens would help farmers in this regard.
- **Sustainable prices:** Schemes like GRAM (Gramin Agriculture Markets) and eNAM would be bringing a competitive price discovery model for smallest of the farmers.
- **Development of manufacturing sector:** This will ensure the surplus workforce to be absorbed into the productive work and will reduce the pressure on agricultural land. Development of MSMEs should be a part of this as they employ most of the non-farm workers. India is currently in the process of formulating a new Industrial Policy aimed at making India a manufacturing hub by promoting 'Make in India'.
- **Development of Rural sector:** a comprehensive rural development strategy that focuses on rural infrastructure to create off-farm rural employment opportunities, reduce labour mobility costs, increase education and skills in combination with measures regarding land consolidation and better land management, and finally improve the functioning of land markets, in particular the rental markets, may be the best means to address the problem of land fragmentation. Such a cross-sectoral approach would be more likely to contribute successfully to farm consolidation and farm development and, in general, to an improvement in rural household welfare.

What is Agriculture Census?

- Agriculture Census in India is **conducted at five-year intervals** to collect data on structural aspects of farm holdings. The basic statistical unit for data collection is 'Operational Holding'.
- The first census was conducted with reference year 1970-71. So far, nine censuses have been done and this is the 10th in series.
- **It is carried in three phases:** In the first phase of the census, data on primary characteristics like number of operational holdings and area operated by different size classes (marginal, small, semi-medium, medium and large), social groups, (SC and ST and others), gender (male/female), types of holding etc. is collected.
- In the **second phase** of the census, detailed data on characteristics of operational holdings such as land use, irrigation status, tenancy particulars are collected based on samples from 20% of villages in each tehsil.
- While in the **third and final phase**, data on the pattern of input use by operational holdings is collected. This is also known as Input Survey.

Operational holding has been defined as all land used wholly or partly for agricultural production and is operated as one technical unit by one person alone or with others without regard to the title, legal form, size or location.

Total operated area, which includes both cultivated and uncultivated area provided part of it is put to farm production during the reference period.

3.6. PRADHAN MANTRI FASAL BIMA YOJANA (PMFBY)

Why in News?

Government modified operational guidelines for Pradhan Mantri Fasal Bima Yojna (PMFBY).

Need for modification in Guidelines

- **Gaps in assessment of crop loss:** There was lack of trained outsourced agencies, scope of corruption during implementation and the non-utilisation of technologies like smart phones and drones to improve reliability of sampling.
- **Inadequate and delayed claim payment:** Insurance companies, in many cases, did not investigate losses due to a localised calamity and, therefore, did not pay claims.
- **Massive profits for insurance companies:** Insurance companies have been charging high actuarial premium rates and gaining huge profits for them.
- **Coverage only for loanee farmers:** PMFBY remains a scheme for loanee farmers – farmers who take loans from banks are mandatorily required to take insurance. Like previous crop insurance schemes, PMFBY fails to cover sharecropper and tenant farmers.
- **Poor capacity to deliver:** There had been no concerted effort by the state government and insurance companies to build awareness of farmers on PMFBY. Insurance companies have failed to set-up infrastructure for proper implementation of PMFBY. There is still no direct linkage between insurance companies and farmers. Insured farmers receive no insurance policy document or receipt.

New provisions guidelines of PMBFY

- **Provision of Penalties:**
 - The Government has decided to incorporate the provision of penalties for States and Insurance Companies for the delay in settlement of insurance claims
 - The farmers will be paid 12% interest by insurance companies for the delay in settlement claims beyond two months of prescribed cut-off date. State Governments will have to pay 12% interest for the delay in release of State share of subsidy beyond three months of prescribed cut-off date submission of requisition by insurance companies.
- **Evaluation of Insurance Companies:** The new operational guidelines has made a Standard Operating Procedure (SOP) for evaluation of insurance companies and remove them from the scheme if found ineffective in providing services.
- **Horticulture:** The Government has also decided to include perennial horticultural crops under the ambit of PMFBY on a pilot basis.
- **Wild Animal attack:** The scheme provides add on coverage for crop loss due to attack of wild animals, which will be implemented on a pilot basis.
- **Standing crop and post-harvest loses:** Losses due to localised perils (Hailstorm, cloud burst,natural fire, landslide & inundation) and Post-Harvest losses due to specified perils, (Cyclone/Cyclonic rain & Unseasonal rains) shall be assessed at the affected insured field of the individual insured farmer.
- **Definition of major crops:** Definition of Major Crops, Unseasonal rainfall and Inundation incorporated for clarity and proper coverage. For defining a crop as a major crop for deciding the Insurance Unit level, the sown area of that crop should be at least 25% of Gross Cropped Area in a District/ Taluka or equivalent level
- **Aadhar Number:** Aadhaar number will be mandatorily captured to avoid duplication of beneficiaries.
- **Budget allocation:** Separate Budget Allocation for Administrative expenses (atleast 2% of budget of scheme).
- **Non Loanee Farmers:** The insurance companies are given a target of enrolling 10% more non-loanee farmers than the previous corresponding season. Non-loanee farmers can approach designated Common Service Centres (CSC), banks and insurance agents for insuring their crop or directly enroll on the portal.
- **Awareness:** The insurance companies will have to mandatorily spend 0.5% of gross premium per company per season for publicity and awareness of the scheme.
- **Rationalization of premium subsidy release process:** Release of upfront premium subsidy will be made at the beginning of the season and it has been rationalized to reduce the delay in settling the claims of farmers.
- **Time frame for the claim:** The farmers will get 72 hours to intimate individual claims against the existing 48 hours. This can be done through any of the channels provided under the Scheme and directly on the portal of PMFBY.

About Pradhan Mantri Fasal Bima Yojana (PMFBY)

It aims at supporting sustainable production in agriculture sector by way of:

- Providing financial support to farmers suffering crop loss/damage rising out of unforeseen events
- Stabilizing the income of farmers to ensure their continuance in farming
- Encouraging farmers to adopt innovative and modern agricultural practice
- Ensuring flow of credit to the agriculture sector.

Role of Gram Sabhas

- Gram Sabhas across the country have been asked to inform farmers about the enrolment and benefits of Pradhan Mantri Fasal Bima Yojna (PMFBY) at the beginning of the Rabi season.
- The Ministry of Agriculture and Farmers' Welfare had requested the Ministry of Panchayati Raj and the state governments to include this as an agenda in the upcoming Gram Sabhas.
- This is as part of the awareness initiatives taken up at various levels by the Govt and Insurance Companies.

- **Capping of the Premium Rate:** Earlier, there was a provision of capping the premium rate which resulted in low claims being paid to farmers and it was done to limit Government outgo on the premium subsidy. This capping has now been removed and farmers will get claim against full sum insured without any reduction.
- **Grievance redressal Mechanism:** In case of any grievance, the farmers can access dedicated grievance redressal authorities. Revised operational guidelines provide for appointment of District Level Grievance Redressal Officer and creation of State and District Grievance Redressal Cells for fast redressal of grievances.
- **Use of technology:** Smartphones should be used to capture and upload data of crop cutting to reduce the delays in claim payments to farmers and Remote sensing to reduce the number of crop cutting experiments.

3.7. RURAL HAATS IN GRAM SCHEME

Why in news?

The Centre has identified 1,878 rural haats for modernisation and development of infrastructure through MGNREGA till March 2019 under Gramin Agriculture Markets (GrAM) programme in the first phase.

More on News

- In total, infrastructure in around 22,000 rural haats is to be upgraded and modernised with a corpus of almost Rs 20 billion spread over 2-3 years.
- Of this in the first phase, Centre has identified around 1,878 rural haats, which includes, the maximum around 564 haats in Andhra Pradesh, followed by 188 in Gujarat, 186 in Rajasthan, 182 in Tamil Nadu and 176 in Telangana.

Rural Haats Existing in the Country

- **Ownership:** These are owned by Local Bodies (Panchayats/councils), Agricultural/ Horticultural Departments of State Governments, Cooperatives, Marketing Boards/APMCs and Private Sector.
- **Quantity:** As per information provided by State Agricultural Marketing Boards/State Governments, there are 22941 Rural Haats
 - Under local Bodies including Councils- 11811
 - Under Marketing Board/APMCs- 1274
 - Under Private sector (Trust, individuals, etc.)- 9856

However, State Marketing Boards provided only numbers without other information like location, etc on village haats under local bodies and under private sector.

Gramin Agricultural Markets (GrAMs)-Budget 2018-19 Announcement

- Develop and upgrade existing 22,000 rural haats into Gramin Agricultural Markets (GrAMs).
- Physical infrastructure to be strengthened using MGNREGS and other Government Schemes.
- PMGSY (Phase-III) to be used for strengthening road linkages from habitations to GrAMs.
- Setting up of **Agri-Market Infrastructure Fund** with a corpus of Rs. 2000 crore to
 - ✓ Develop and upgrade agricultural marketing infrastructure in 22,000 GrAMs
 - ✓ Strengthening 585 APMC market
- GrAMs to be linked to e-NAM.
- GrAMs to be outside the APMC Act regulation.

Functioning of Rural Markets

- The rural markets which are **multi commodity in nature** are first contact point of market where farmer – producers sell their surplus to local consumers.
- In some of these markets **livestock is also assembled for sale** in bigger markets. Also non farm products for daily needs are sold.
- In Rural Markets, trade is characterized by **direct sales of small quantities of produce** by producers to village traders and by retail sales to rural consumers.
- Besides goods, that are not produced locally, are brought by smaller; occasional traders to retail to local population.

Why Upgrade Rural Markets into GrAMs?

- As per the **recommendations of Ashok Dalwai Report on doubling farmers' income**, the rural periodic markets need to be upgraded into a function that enables aggregation and transportation from village level to wholesale market.
- It has been advised to **build on the available infrastructure** to establish large number of primary rural agricultural markets to provide the **following two services**:
 - Direct marketing between producers and consumers
 - Aggregation platforms for the small lots of farmers
- These markets, through their interconnections, are a farmer's main connection point with the **inter and intra regional marketing system**. Under GrAMs, infrastructure and business linkages with markets will get a boost. This will also ensure participation of **small and marginal farmers** to markets especially eNAM.
- **Lower Prices:** The ruling prices in these primary markets are invariably much lower. Price variations are attributed to **lack of infrastructure** such as storage, transport, etc.
- Due to lack of infrastructure, many times the **farmer is forced to sell** at harvest time, at low prices, only to buy back in off season at higher prices.
- There is an **increasing awareness** amongst the rural population about advantages of selling their produce at market points to secure competitive prices.
- **Rising Production:** Awareness, coupled with increase in Agricultural & Horticultural production, will generate larger arrivals in Rural Markets. Handling of larger turnovers will necessitate providing appropriate infrastructure facilities at these markets.

Issues in developing GrAMs:

- **Parallel Acts:** The issue in developing Rural periodic markets are the parallel acts i.e. which administer the ownership and operation of these markets. For example- multiplicity of regulatory Acts- Agricultural Produce market act 1972, Panchayat Act and Municipal Act etc. acting in parallel has resulted in absence of unidirectional development.
- **Role of Private sector:** The upgradation of rural markets will require greater role of public and private sector in providing enabling environment for growth, enhancing market facilities and market information. A **PPP model** for developing these markets needs to be developed.
- **Capacity building and awareness creation:** Capacity building and awareness building of farmers and traders about marketing is required to be in place. Empowering farmers with information, services and linkages through training will help in bringing the desired change in rural markets faster.

3.8. FISHERIES & AQUACULTURE INFRASTRUCTURE DEVELOPMENT FUND

Why in news

The Cabinet Committee on Economic Affairs chaired by the Prime Minister has given its approval for creation of special Fisheries and Aquaculture Infrastructure Development Fund (FIDF).

Features of FIDF

- **Funding:** The approval entails an **estimated fund size** of Rs.7,522 crore, comprising Rs.5,266.40 crore to be raised by the Nodal Loaning Entities (NLEs), Rs. 1,316.6 crore beneficiaries contribution and Rs.939.48 crore budgetary support from the Government of India.
- **Nodal Loaning Entities:** National Bank for Agriculture and Rural Development (NABARD), National Cooperatives Development Corporation (NCDC) and all scheduled Banks shall be the Nodal Loaning Entities.
- **Financing investment activities:** FIDF would provide concessional finance to State Governments/UTs and State entities, cooperatives, individuals and entrepreneurs etc., for taking up of the identified investment activities of fisheries development.

Benefits of FIDF

- **Rise in production:** To augment fish production to achieve its target of 15 million tonne (MT) by 2020 set under the **Blue Revolution**; and to achieve a sustainable growth of 8% -9% thereafter to reach the fish production to the level of about 20 MT by 2022-23.
- **Employment opportunities:** It will give employment to over 9.40 lakh fishers/fishermen/fisher folk and other entrepreneurs in fishing and allied activities.
- **Rise in Investment:** The credit facilities will help attract investment in creation and management of fisheries infrastructure facilities.
- **Innovation:** Facilitate adoption of new technologies such as Open sea cage farming.

Fisheries Sector in India

- India has **vast potential** for fisheries considering long coastline of about 8118 km, and an Exclusive Economic Zone (EEZ) of 2.02 million sq Km apart from the inland water resources.
- India is the **second largest producer** of fish and fresh water fish in the world.
- **Fish production** in India is estimated at 11.4 million tonnes, out of which 68% is registered from inland fisheries sector and the remaining 32% from marine sector.
- Constituting about 6.3% of the global fish production, the sector contributes to 1.1% of the GDP and 5.15% of the agricultural GDP.
- The fisheries sector is a source of **livelihood for over 14.49 million people** engaged fully, partially or in subsidiary activities pertaining to the sector. Besides, an equal number are engaged in ancillary activities in fisheries and aquaculture.
- **Blue Revolution:** Integrated Development and Management of Fisheries approved by the Government provides for a focused development and management of the fisheries sector to increase both fish production and fish productivity from aquaculture and fisheries resources of the inland and marine fisheries sector including deep sea fishing.

3.9. DRAFT POLICY ON MARICULTURE

Why in News?

A draft national policy on Mariculture has been formulated to ensure sustainable farmed seafood production for the benefit of food and nutritional security of the nation.

About Mariculture

Mariculture is a specialised branch of aquaculture involving the cultivation of economically important marine plants and animals in the sea or any other water body having tidal influence and includes onshore facilities like hatcheries, nursery rearing and grow out systems using seawater. It is generally practiced in the sea up to 12 nm from the coast and also in water bodies which have a salinity regime close to seawater.

Status and Opportunities of Mariculture in India

- In India, the marine capture fisheries is characterised by increased and excessive fishing effort, overexploitation of certain resources from the inshore fishing grounds and increased conflicts among different stakeholders in the sector.
- Further, India needs to produce about 18 million tonnes of fish by 2030 as compared to the 10 million tonnes that we produce through capture and culture today. This would necessitate increasing our aquaculture production from about 4.9 million tonnes now to 12 million tonnes.
- Hence, steps for the emergence of a mariculture production sector is the only option for meeting the demand for fish in the coming years. Considering this it is stated in the National Policy on Marine Fisheries 2017 that "Mariculture if carried out can play an important role in increasing fish production from the coastal waters."
- Also, development of a mariculture sector also strengthens the Blue Revolution policy of GOI.

Related Facts

- Globally, aquaculture has emerged as the fastest growing food production sector with an annual growth rate of >6% in the last two decades. Mariculture is the fastest growing subsector of aquaculture and has very high growth potential.
- In 2016, mariculture contributed around 28.7 million tonnes of food fish which formed about 35.8% of the global food fish aquaculture production.

Key features of the Policy:

- **Mariculture Area Development:** It has mooted mariculture zones by demarcating special areas in the sea. Satellite remote sensing data and GIS will be used to identify potential zones.
- **Mariculture Systems and Species:** The policy allows farming exotic and genetically modified species in closed mariculture systems after stringent risk assessment and monitoring.
- **Seed and Feed:** In order to address the seed and feed scarcity, innovative schemes will be developed.
- It seeks to provide additional livelihood options to the coastal communities.
- **Leasing Policy:** Referring to the security of the mariculture enterprises in the open sea waters, the policy has made provisions for leasing the water bodies and regulating the activities.

3.10. FOURTH INDUSTRIAL REVOLUTION

Why in News?

World Economic Forum launches Centre for Fourth Industrial Revolution in India.

More on the news

- The centre would be based in Maharashtra and it has selected **drones, artificial intelligence and blockchain** as the first three projects.
- It will work in collaboration with the government on a national level to **co-design new policy frameworks and protocols for emerging technology** alongside leaders from business, academia, start-ups and international organizations.
- NITI Aayog will coordinate the partnership** on behalf of the government and the work of the centre among multiple ministries.

Impacts of Fourth Industrial Revolution

It was coined by Klaus Schwab in 2016. It fuses physical, digital and biological spheres, and is transforming global production systems. Advanced technologies, such as the internet of things, artificial intelligence, blockchain, robotics and additive manufacturing, are changing the future of manufacturing. Its impacts include-

- If harnessed correctly, this technological change can bring about immense **economic opportunities** including new and better ways of doing business, the creation of new industries, new and better-quality jobs, higher GDP growth, and improved living standards.
- Workplaces and **organizations become "smarter"** and more efficient as machines, and humans start to work together, and the use of connected devices enhance supply chains and warehouses.
- There is also the capacity to **reduce costs** significantly, to reduce the necessity for businesses to have a physical presence, and to create opportunities for new, small-scale producers to enter the increasingly globalised markets.
- There is a **destruction effect** as technology-fuelled disruption and automation **substitute capital for labour**, forcing workers to become unemployed or to reallocate their skills elsewhere. It will be accompanied by a **capitalization effect** in which the demand for new goods and services increases and leads to the creation of new occupations, businesses and even industries.
 - A **McKinsey report** estimates that, by the year 2030, at least one-third of the activities of 60% of all the occupations could be automated and globally, up to 375 million people may need to change jobs or learn new skills within the next 12 years.

Fourth Industrial Revolution and India

Opportunities for India

- India can play a pivotal role in shaping the global fourth Industrial revolution due to the benefits of a better **demographic dividend** (By 2020, the median age in India will be just 28, compared to 37 in China and the US).
- India can reap maximum **benefits of its expansion** in telecommunication sector, huge increase in data usage and availability due to government initiatives like Digital India campaign, Start-up India and the Atal Innovation Mission etc.
- Artificial intelligence (AI)** can be used effectively to reduce poverty, improve the lives of farmers and make the lives of the differently abled simpler. AI has vast applications across sectors – ranging from

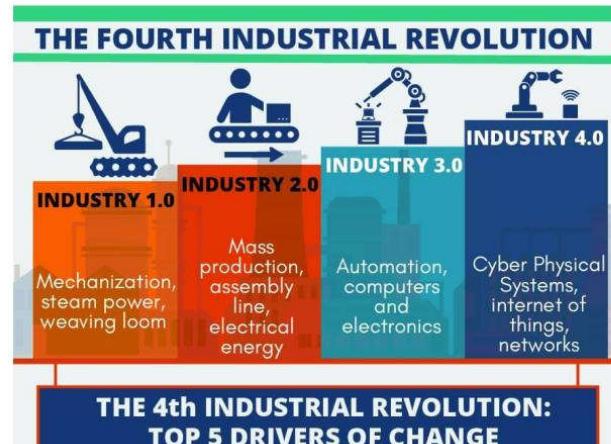
Related information

World Economic Forum

- It was established in 1971 as a **not-for-profit foundation** and is **headquartered in Geneva, Switzerland**.
- It is the **International Organization for Public-Private Cooperation** and the Forum engages the foremost political, business and other leaders of society to shape global, regional and industry agendas.

World Economic Forum Centre for the Fourth Industrial Revolution Network

- The global network of Centres for the Fourth Industrial Revolution brings together **governments, leading companies, civil society and experts** from around the world to co-design and pilot innovative approaches to the policy and governance of technology.
- Its vision is to shape the development and use of technology in ways that **maximize the benefits and minimize the risks**.
- The network will develop, implement and scale up **agile and human-centred pilot projects** that can be adopted by policy-makers, legislators and regulators worldwide.



"Disruptive changes to business models will have a profound impact on the employment landscape over the coming years."

medicine to criminal justice, to manufacturing, to finance.

- With the right mix of accelerators – including **regulatory frameworks, educational ecosystems and government incentives** – India can lead the Fourth Industrial Revolution while simultaneously enhancing the quality, equity and sustainability of its own growth and development outcomes.



Challenges for India

- Apart from shrinking jobs, India's large number of **low skilled youth** will also face major challenges in big industries as well as MSMEs because **product cycles will become very short** and this will lead to a lot of **uncertainty and unpredictability**.
- Small scale manufacturing faces deep **infrastructural problems** as well as **inadequate access to credit** which will be a hinderance in benefiting from the changes.
- The highly educated and technically skilled people will command huge salaries in large manufacturing enterprises using robotics and artificial intelligence which will create a huge income gap between the skilled and the unskilled workforce.

Way forward

With the right mix of accelerators - including **regulatory frameworks, educational ecosystems and government incentives** - India can lead the fourth industrial revolution, while simultaneously enhancing the quality, equity and sustainability of its own growth and development outcomes. Among various steps required, following are some important ones-

- Companies should **invest in their technical infrastructure and data analysing capabilities**. All businesses must be making a move to be smart, connected organizations or they will soon fall behind the competition.
- Education and training systems** need to adapt to better prepare people for the flexibility and critical thinking skills they will need in the future workplace.
- India needs to strike the right balance between vocational and **new digital industrial skills**, boosting **education in data science and coding** but also providing greater training in **traditional manufacturing skills**.
- India must take a pragmatic approach to quickly **boost traditional manufacturing** while **adopting new digital industrial technologies** that will secure long-term competitiveness.

For more details on Blockchain technology, please refer Mains 365 Science &Technology

3.11. BALI FINTECH AGENDA

Why in News?

The International Monetary Fund (IMF) and the World Bank launched the Bali Fintech Agenda.

About Agenda

- The Bali Fintech Agenda is a set of **12 policy elements** established to help member countries harness the benefits and opportunities of rapid advances in financial technology (fintech), while at the same time also managing the risks that arise.
- The Agenda proposes a framework of **high-level issues** that countries should consider in their own domestic policy discussions and aims to guide staff from the two institutions in their own work and dialogue with national authorities.
- The 12 elements are distilled from members' own experiences and cover topics relating broadly to enabling fintech, building the foundations of the digital economy, ensuring financial sector resilience, addressing risks, promoting international cooperation, improve cross-border payments and remittance transfer systems.
- It provides a framework to support the Sustainable Development Goals, particularly in low-income countries, where access to financial services is low.

Fintech in India

- According to EY's Fintech Adoption Index 2017, India has the **second highest fintech adoption rate in the world**.
- With a range of options, including e-wallets, lending and insurance, the variety of services provided in this sector are immense and have changed the way consumers carry out their daily transactions.
- Fintech in India is especially advantageous, since the country boasts of an unrivalled youth demographic which is rapidly growing. Furthermore, smartphone penetration is likely to witness an upsurge - from 53% in 2014 to 64% by 2018.
- The financial services market in India is primarily untapped, with 40% of the population having no association with any bank and more than 80% of the transactions carried out through cash. This represents an opportunity for Fintech start-ups to massively spread their wings in different segments.

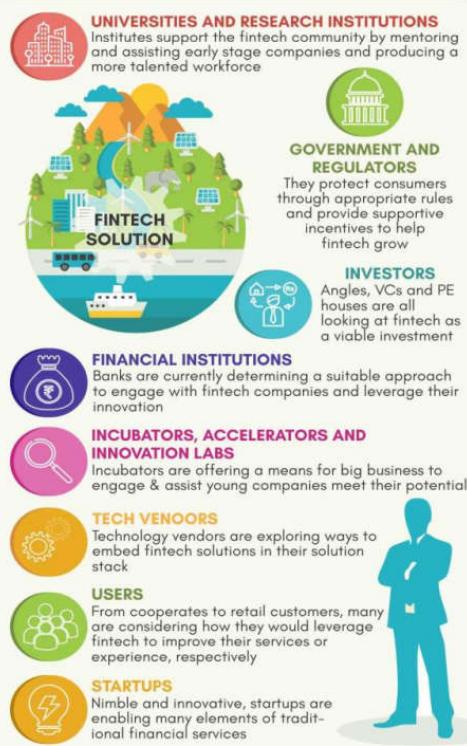
Challenges in India

- **Adoption of Fintech:** Adoption becomes complicated in an economy like India's which is dominated by micro, small and medium enterprises (MSMEs). Going digital for payments can be complicated.
- **Cost involved in Integration:** Integrating with Fintech doesn't come cheap. The cost can be prohibitive for MSMEs.
- **Regulatory framework:** Regulatory uncertainty in the fintech sector is posing a major challenge. This would require "the modification and adaptation of regulatory frameworks to contain risks of arbitrage, while recognizing that regulation should remain proportionate to the risks." The regulatory framework for entering in Indian market and performing as one is highly restrictive in nature.
- **Infrastructure:** Poor infrastructure in terms of Internet Connectivity, unbanked population and low financial literacy level are another hindrance.
- **Cash Dependency:** The conservative approach of users and merchants to deal in cash is really hard to change. Since it's not part of financial life but a way to their financial transactions.
- **Frauds:** Transaction can easily turn into fraud by tech people aware of glitches in software.
- **Lack of government support:** Lack of government support and some sort of Incentives for protecting the Interest of Fintech in India is demoralizing the start and entrepreneurs at very basic level.
- **Lack of investors:** Fintech do not get the required seed capital and other required investment on time which make their operations and functioning really below the mark.

What is Fintech?

- Fintech (financial technology) is used to describe new tech that seeks to improve and automate the delivery and use of financial services.
- At its core, fintech is utilized to help companies, business owners and consumers better manage their financial operations, processes and lives by utilizing specialized software and algorithms that are used on computers and, increasingly, smartphones.

PILLARS OF A FINTECH ECOSYSTEMS



Way forward

- **Focusing on the end user:** QR codes have been viewed by fintech companies as a way to acquire merchants at a low cost. End customers are either unfamiliar with navigating the app, or the person sent to make the purchase does not have a smartphone, does not own and control a bank account, or both. Fintech providers have to consider this audience while developing a payment solution.
- **Ensure solution for better alternative:** The availability of small change, which is often refused by banks owing to high storage and transportation costs, inevitably finds its way to small merchants and households, and is used for low-value transactions. Fintech needs to tap the market by ensuring easy small transactions.
- **Identify and empower change agents:** Fintechs could offer business value to merchants for encouraging end customers to pay digitally. A dedicated helpline or interactive voice response service (IVRS) for merchants can help address ongoing issues with using the QR-UPI solution.
- **Establish clear business and customer value:** Many businesses, which operate in the low-income space, have low profit margins. However, digital financial solutions can lower costs or increase revenue at a marginal cost, driving business value. Hence understanding the need of market becomes really important.
- **Create an Enabling Policy Environment:** The creation of a 'regulatory sandbox' - a 'safe space' for businesses and startups to co-create innovative products, services and business models, without any immediate regulatory consequences and also providing cyber security becomes important.
- **Access to Risk Capital:** This is critical to fund innovative ideas and startups. It can be addressed by developing funding mechanisms, including the government setting up a fund of funds or by instituting a matching fund concept along with the private sector.

3.12. DRAFT ELECTRONIC POLICY

Why in News?

With an aim to create a \$400-billion electronics manufacturing industry by 2025, the Ministry of Electronics and Information Technology (MeitY) has come out with the draft 'National Policy on Electronics 2018' (NPE 2018).

ESDM Sector in India

- The ESDM sector in India consists of the following six segments –Semiconductor design and manufacturing; Electronic components manufacturing; Information technology (IT) systems and hardware; Telecom products and equipment; Consumer electronics; and Strategic electronics.
- India allows 100 percent FDI through the automatic route in the ESDM sector.
- The Indian Government attaches high priority to electronics hardware manufacturing and it is one of the important pillars of both "Make in India" and "Digital India" programmes of Government of India.
- Besides the economic imperative, focus on electronics hardware manufacturing up to the Chip level is required due to the growing security concerns.
- Indian electronics hardware production has increased from INR 1,90,366 crore in 2014-15 to an estimated INR 3,87,525 crore (~USD 59 Billion) in 2017-18, registering a Compound Annual Growth Rate (CAGR) of 26.7%, as against a growth rate of 5.5% in 2014-15.
- According to an ASSOCHAM report, electronic imports by India may touch \$300bn by 2020.

Need for National Policy on Electronics

- The electronics hardware manufacturing sector faces lack of level playing field vis-à-vis competing nations on account of several disabilities which render domestic electronics hardware manufacturing uncompetitive.
- These inter-alia includes lack of adequate infrastructure, supply chain and logistics; high cost of finance; inadequate availability of quality power; inadequate components manufacturing base; limited focus on R&D by the industry and high degree of market access, leading to limited value addition.
- With the demand for electronics hardware expected to rise rapidly to about USD 400 Billion by 2023-24, India cannot afford to bear a huge foreign exchange outgo on import of electronics alone. Therefore, promoting domestic electronics hardware manufacturing, with high value addition is of critical importance.
- Implementation of the Schemes/ Programmes under the aegis of NPE 2012 has successfully consolidated the foundations for a competitive Indian ESDM value chain. The Government now seeks to build on that foundation to propel the growth of ESDM industry in the country.

Initiatives taken for ESDM sector in India

- **Electronics Manufacturing Clusters (EMC):** In order to overcome disadvantages due to infrastructure, EMC was launched which encouraged entities, including State Government entities, to provide good quality infrastructure and logistics within a cluster.
- **Modified Special Incentive Package scheme (M-SIPS):** In order to compensate for disadvantages in domestic manufacturing, M-SIPS was launched which provides for capital subsidy of 25% for Electronics Industry located in non-SEZ area and 20% for those in SEZ areas.
- **Preferential Market Access:** It is a scheme guaranteeing preference for locally manufactured products during procurement (minimum 30%) for government projects.
- **Electronics Development Fund (EDF):** In order to promote startups and innovation and also to achieve an ambitious target of 'Net Zero Imports' by 2020, EDF was launched which is a fund of funds which invests in Venture funds, which in turn invests in ventures.
- **Phased Manufacturing Programme (PMP):** PMP for mobile handsets and related sub-assemblies/ components manufacturing has been implemented with the objective of progressively increasing the domestic value addition for establishment of a robust Cellular mobile handsets manufacturing eco-system in the country.
- **The Merchandise Export from India Scheme (MEIS):** MEIS offers export incentives of up to a maximum of five percent on locally manufactured products like refrigerating equipment compressors, fully automatic washing machines, and color television sets.

Highlights of draft of the National Electronics Policy, 2018

- **Mobile Handsets:** The policy targets production of **one billion mobile handsets by 2025**, valued at \$190 billion including export of 600 million mobile handsets valued at \$110 billion and improving ease of doing business for ESDM industry.
- **Electronic Manufacturing Clusters:** 20 Greenfield EMCs and three brownfield EMC projects have been sanctioned with the project outlay of \$550 million including \$225 million from the government. It aims to facilitate cost effective loans for EMC.

First National Electronic Policy 2012

- It provided the road map for the development of Electronics System Design and Manufacturing (ESDM) sector in the country.
- It had proposed creation of 200 electronic manufacturing clusters (EMCs) by 2020 that will house entire ecosystem for development and production of specific category of products.

- **Sub sector of Electronics:** The policy proposes to push development of core competencies in all the sub-sectors of electronics including **electronic components and semiconductors, defence electronics, automotive electronics, industrial electronics, strategic electronics and fabless chip design.**
- **Tax Benefits:** The draft proposes suitable **direct tax benefits**, including inter-alia investment-linked deduction under Income Tax Act for electronics manufacturing sector.
- **Support:** It proposes to provide **support to skilled manpower in ESDM sector, export led growth, policy support and special package of incentives** for highly capital intensive projects.
- **Startup ecosystem:** The policy aims to also **push the startup ecosystem in emerging technology areas such as 5G, Internet of Things, artificial intelligence and machine learning**, and their applications in areas such as defence, agriculture, health, smart cities and automation.
- **Modified Special Incentive Package Scheme:** It also proposes **replacing the M-SIPS (Modified Special Incentive Package Scheme)** with schemes that are easier to implement such as interest subsidy and credit default guarantee, etc., in order to encourage new units and expansion of existing units in electronics manufacturing sector.
- **Environment:** It aims to promote research, innovation and support to industry **for green processes and sustainable e-Waste management**, including safe disposal of e-Waste in an environment friendly manner, development of e-Waste recycling industry and adoption of best practices in e-Waste management.
- **Global Presence:** It focuses to become a global leader in the Electronics Manufacturing Services (EMS) segment by promoting progressively higher value addition in manufacturing of electronic products.
- **Governance Structure:** Create specialized governance structures within the Government to cater to specific needs of the ESDM sector, in view of fast changes in technology and business models.

3.13. DATA LOCALISATION

Why in News?

- The Reserve Bank of India's data localisation policy has caused a division between domestic payment companies and their global counterparts in the Indian payments scene.
- As many as 80 per cent players in the payment industry, including Amazon, Paytm and WhatsApp, have complied with the norms for local storage of data, with RBI's deadline of October 15.

About Data Localisation Policy

- Data localisation is a concept that the personal data of a country's residents should be processed and stored in that country. Some directives may restrict flow entirely, while others more leniently allow for conditional data sharing or data mirroring – in which only a copy has to be stored in the country.
- As of now, much of cross-border data transfer is governed by individual bilateral "mutual legal assistance treaties" (MLATs). The MLAT process was envisaged as a cooperation mechanism for criminal investigations by law enforcement agencies (LEAs) in exceptional circumstances. Over time, MLATs have proven to be ill-suited to handle large number of requests or provide immediate or time-bound access to critical information.
- In early April, the RBI issued a circular mandating that **payment data be stored only in India** by October 15. This covered everyone from Mastercard and Visa to WhatsApp Payments and PayTM.

Need of Data Localisation

- Digital data in India was around 40,000 petabytes in 2010; it is likely to shoot up to 2.3 million petabytes by 2020 — twice as fast as the global rate. If India houses all this data, it will become the second largest investor in the data centre market and the fifth largest data centre market by 2050.
- "Data is the new oil" provides a backbone to much of the localisation drive. In the home of the largest open Internet market in the world, companies like PhonePe claim that national wealth creation relies on in-house data storage.
- The e-commerce policy took on a similar stance, championing domestic innovation, and the data protection report also mentioned harnessing India's digital economy through data localisation.
- India has the second-highest fintech adoption rate in the world, creating multiple opportunities for payments companies — both national and international. This also translates into a growing volume of user and transaction data, coupled with the challenges of data breach and fraud.
- The Indian government is of the view that if data is stored outside the sovereign boundaries of the country, the RBI's ability to "monitor payments activity" is curtailed.
- India's law enforcement agencies security agencies are backing the RBI's push for data localisation owing to difficulties in carrying out cross-border probes.

Issue over Data Localisation

Global Companies' Stand	Domestic Companies' Stand
<p>Global Companies' Stand</p> <p>Global corporations such as Pay-Pal, Visa and Mastercard along with payment service providers like Google and Amazon have sought more time and have also asked to be allowed to mirror the data. According to them:</p> <ul style="list-style-type: none">• Regulators should understand the value of free flow of data, thereby indicating stringent localisation norms could affect innovation and ease of doing business in India.	<p>Domestic Companies' Stand</p> <p>Domestic companies like Paytm and PhonePe came out strongly in support of data localization. According to them:</p> <ul style="list-style-type: none">• Data localisation is important for national security.• Global companies are worried that the monetisation potential through the data generated reduces drastically and they also become more accountable in India.
<ul style="list-style-type: none">• Localization would lead to a larger presence in India overall, such as local offices, and increase tax liability.• It may backfire on India's own young start-ups that are attempting global growth, or on larger firms that process foreign data in India, such as Tata Consulting Services and Wipro.• Global payment players will have to increase their investments in the country, both on infrastructure and on timely execution.	<ul style="list-style-type: none">• Primary data storing and processing should be in India but mirroring can be allowed for global remittance companies as long as only the copy is kept outside.• It would allow for better regulatory oversight and plug business jurisdiction related loopholes that some foreign companies have long exploited to evade paying fair taxes in India.

Challenges in Data Localisation

- **Misuse of Data:** Critics not only caution against state misuse and surveillance of personal data, but also argue that security and government access is not achieved by localisation. Even if the data is stored in the country, the encryption keys may still remain out of the reach of national agencies.
- **Cyber Security:** Businesses in India were most at risk to cyber security attacks. This can put data of citizens in danger.
- **Increase of conflicts:** This may be perceived as a protectionist policy which may lead to other countries following suit and increased conflict over data sharing.
- **Access to data:** Technology experts argues that the physical location of data is irrelevant. Data can be accessed from a server in Bengaluru or Boston just as easily. In fact, having a mirror of data in India may actually increase the cost of operation and compliance.
- **Cloud Computing Softwares:** Cloud computing softwares have taken advantage of the economies of scale and an infrastructural architecture across the world. Thus, when there is a threat presumed in one part of the world, the algorithm would move the data to another location or even in multiple locations. However, this flexibility may be hampered due to data localization.

Data Localization in Other Countries

- **Russia:** It has the most restrictive regulation for data flow with strict localisation and high penalties.
- **China:** It mandates localisation for all “important data” held by “critical information infrastructure” and any cross border personal data transfer must undergo a security assessment.
- **US:** It leaves regulation up to the state and sector. Earlier this year, it signed the **Clarifying Lawful Overseas Use of Data Act (CLOUD Act)** which established data sharing with certain countries.
- **EU:** The European Union's General Data Protection Regulation doesn't have a specific data regulation rule, only stressing that cross-border data movement can happen if the other country has stringent rules to secure information.

Future of Data Localisation in India: A Balanced Approach

- Data localisation rules are not motivated by a single national or private interest. Various simultaneous factors contribute to national strategies on restricting cross-border data flows or establishing controls for transfer of information.
- Technological sovereignty goes beyond the idea of economic competition and builds on the idea that advancements in the technological capacity of one nation threaten the national sovereignty of another. This stems from the growing perception that nations that are able to localise technological development and control data flows will fare better in the Internet governance order.
- Data localisation or restrictions on movement of data are primarily understood in terms of their economic value or as a geopolitical strategy that helps nations consolidating information security and sovereignty online. However, it is equally important to think about the consequences of such policies on democracy and human rights particularly in this time of growing public debate about the use and commercialisation of individual data.

3.14. INSURANCE SECTOR IN INDIA

Why in News?

India's insurance gap widens despite deeper penetration according to report "A world at risk- Closing the insurance gap" by Lloyd's of London.

Insurance Sector in India

- The Indian Insurance Sector is basically divided into two categories – Life Insurance and Non-life Insurance.
- Both the Life Insurance and the Non-life Insurance is governed by the IRDAI (Insurance Regulatory and Development Authority of India).
- Among the life insurers, Life Insurance Corporation (LIC) is the sole public sector company. Apart from that, among the non-life insurers there are six public sector insurers. The Non-life Insurance sector is also termed as General Insurance.
- In India, the insurance gap has widened from \$19.7 billion in 2012 to \$27 billion in 2018, even though non-life insurance penetration has improved marginally from 0.7 per cent of Gross Domestic Product (GDP) in 2012 to 0.9 per cent as of 2018.
- The Indian insurance market is a huge business opportunity. India currently accounts for less than 1.5 per cent of the world's total insurance premiums and about 2 per cent of the world's life insurance premiums despite being the second most populous nation.
- India's life insurance sector is the biggest in the world with about 360 million policies which are expected to increase at a Compound Annual Growth Rate (CAGR) of 12-15 per cent over the next five years. The insurance industry plans to hike penetration levels to five per cent by 2020.
- India had also increased FDI limit to 49 per cent from 26 per cent in insurance sector to increase the investments in insurance.

Insurance Regulatory and Development Authority (IRDA)

- Established in 1999 under the IRDA Act
- Responsible for regulating, promoting and ensuring orderly growth of the insurance and re-insurance business in India.

- Insurance gap:** It is a measure of the total value of assets divided by the value of assets that are protected by an insurance cover.
- Insurance penetration:** It is the ratio of the total premium underwritten in a particular year to the GDP of the country or industry. It was 3.49% in 2016-17.
- 'Penetration' states the value of total premiums in relation to GDP, while 'Gap' measures the total cost not covered by

Role of Insurance

- Provide safety and security:** Insurance provide financial support and reduce uncertainties in business and human life.
- Generates financial resources:** It generate funds by collecting premium which are further invested in government securities and stock. It also helps in providing Employment opportunities leading to capital formation.
- Promotes economic growth:** It generates significant impact on the economy by mobilizing domestic savings. It provides capital into productive investments especially for long-term investment needs. It enables to mitigate loss, financial stability and promotes trade and commerce activities those results into economic growth and development.
- Spread of financial services in rural areas:** IRDA Regulations provide certain minimum business to be done in rural areas, in the socially weaker sections.
- Spreading of risk:** Insurance facilitates spreading of risk from the insured to the insurer. A large number of persons get insurance policies and pay premium to the insurer. Whenever a loss occurs, it is compensated out of funds of the insurer.

Govt's Initiatives for Insurance

- National Health Protection Scheme** launched under Ayushman Bharat to provide coverage of up to Rs 500,000 to more than 100 million vulnerable families for secondary and tertiary care hospitalization.
- Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)** and **Pradhan Mantri Suraksha Bima Yojana (PMSBY)** to cover all poor households will bring the security of insurance benefits to the marginalised sections, giving basic economic protection in cases of death or injury through accidents of a family member.
- Prime Minister Jan Dhan Yojana (PMJDY)** proposes to bring 60-crore basic accounts within its fold and providing services of micro insurance and unorganised sector pension schemes through these accounts, which will further bolster the economic security of lower income groups.
- Pradhan Mantri Fasal Bima Yojana (PMFBY)** provides crop insurance to farmers against any losses to their crops.

Challenges in Insurance Sector

- Low Awareness:** A huge part of Indian population does not use health insurance to finance their medical expenditures. A large majority of people in India believe that health insurance is not a worthy investment and therefore, avoid buying such insurance products.
- Poor Distribution:** Distribution outside large cities is poor. There are large parts of the country where access to general insurance is limited. The reason insurers and distributors do not build a presence in small towns is that it is unviable.
- Fewer product innovations:** While many essential products to mitigate risk are available, there are gaps in the insurance product portfolio that leaves large risks uninsured.
- Pricing:** Insurers have been focusing on growing sales even if that creates a distortion in pricing for individuals.

- **Perception by influencers:** Another major challenge is posed by the media and influencers. Often, the life insurance industry is portrayed in a negative manner and hence the consumers become skeptical of the life insurance industry. The result is that, they may not purchase life insurance, even though a legitimate need exists.

Way forward

- **Promote Awareness:** It is necessary to promote more awareness among public about benefits of insurance. It can be raised through videos, social media, ads, organizing campaigns etc.
- **Multiple Channels of Distribution:** This is a key determinant of success for companies which creates larger database. Linking insurance with allied finance products like housing loan, mutual fund investment in companies, banks credit cards etc are the new channels for life insurance.
- **Huge Untapped Market:** Middle class people are having more awareness than the lower class and high class people. The demographics and macro-economic factors in India are diverse and insurance systems have to be aligned to other programmes in the country in order to target every section.
- **Better regulation:** Regulatory policies can be made to ensure that insurance companies focus more on insurance targets than profitability.
- **Use of Technology:** Stakeholders will have to leverage Internet and other technology options to provide single window service so as to cross-sell and retain customers. It will also be easier and cheaper for them to process requests, claims settlement process, complaints and payments online.

3.15. DIRECT TAX COLLECTION

Why in news?

Recently, government stated that, there has been significant improvement in direct tax collection in the last few years.

Trends of Direct Tax collection

- There has been a growth of more than 80% in the number of returns filed in the last four financial years and direct tax-GDP ratio rose to 5.98% in FY 2017-18, the highest it has been in the last 10 years.
- Further, the number of persons filing income tax returns also increased by about 65% during period from 2014-2018.
- Moreover, **Direct Tax-GDP ratio rose to 5.98% in FY 2017-18**, which is highest in the last 10 years. This shows a sign of improvement of **Tax-Buoyancy (See Box)** in the economy.

Reasons for increase in Direct Tax collection

- **Growing Economy:** Countries' national income level has been improving over the next few years and its transition into middle-income economy has led to increase in Tax Base.
- **Demonetisation:** Demonetisation has removed the anonymity attached to cash deposit in banks. Thus giving rise to an inquiry, whether the amount deposited is in consonance with the depositor's income.
- **Goods and Service Tax:** Under the GST provisions business entities have to disclose their annual turnover, this makes direct tax evasion a difficult task.
- **Use of Digital platform:** The increase in the use of information being collected digitally by the tax department increased the efficiency in tax collection and helps in checking of tax evasion.
- **Hassle Free Refund:** Small and medium taxpayers are getting easy tax refunds. This has boosted the taxpayer confidence in taxation system of the country, thus resulting into higher tax collection.
- **Government Initiatives** had also contributed to sound rate of Direct Tax collection, these initiatives include;
 - **Income Declaration Scheme:** It offers an opportunity to tax defaulters to disclose their income under the Income Tax Act.
 - **Aaykar Setu:** It is an app to help users, to understand the various nuances of direct taxes, file income tax, apply for PAN, check TDS statement etc.
 - **Project Insight:** It will monitor high-value transactions with use big data analytics to find out any discrepancy between a taxpayer's income and expenses.
 - Increased surveillance from linking Aadhar to Permanent Account Number (PAN) and to bank accounts.
 - A task force has been constituted under Arbind Modi for drafting a new direct tax legislation.

Significance of Direct tax collection

- **High Tax buoyancy:** It is an important metric to know the expected level of government borrowings from the debt market. Higher tax buoyancy would mean the **government would borrow less** — keeping interest rates lower — **while giving room for corporates also to borrow at lower rates** thus reducing **crowding out effect** (See box) in the economy.
- **Fiscal Health:** High rate of direct tax collection increases spending capacity of government on social sectors such as education and health, without compromising the **fiscal prudence** in the economy.
- **Maintaining Inflationary Trends:** High rate of direct tax collection helps in maintaining the optimum interest rate in the economy, which in turn assists in maintaining the inflationary pressure.
- **Lower Indirect tax:** Higher direct tax collections could lower the tax burden on the poor by creating fiscal space for a reduction in GST rates.

Related Information

- **What is a Direct Tax?**
 - These are the taxes, paid directly to the **government by the taxpayer**. Under the direct tax system, the incidence and impact of taxation fall on the same entity, which cannot be transferred to another person.
 - It is termed as a **progressive tax** because the proportion of tax liability rises as an individual or entity's income increases.
 - **Examples-** Income tax, corporate Tax, Dividend Distribution Tax, Capital Gain Tax, Security Transaction Tax.
- The system of Direct taxation is governed by the **Central Board of Direct Taxes (CBDT)**. It is a part of the Department of Revenue in the Ministry of Finance.

Tax Buoyancy

- It is calculated as a ratio of percentage growth in tax revenues to growth in nominal GDP for a given year.
- It is an important indicator of the efficiency and responsiveness of tax revenue mobilisation to GDP growth.

Crowding Out Effect

- It describes the idea that large volumes of government borrowing push up the real interest rate, making it difficult or close to impossible for individuals and small companies to obtain loans.

3.16. ROAD SAFETY

Why in news?

Government data showed that there is a significant increase in road accidents and fatality rate of the pedestrian from 12,330 in 2014 to 20,457 in 2017 — a jump of nearly 66%.

Road Accidents in India

- Pedestrians, cyclists and two-wheeler occupants are the most vulnerable road users. Nearly 133 two-wheeler occupants and nearly 10 cyclists killed were killed daily in road accident in 2017.
- In 2017, approx. 1.47 lakh people died in road deaths which is equivalent to the population of many small cities in India.

Why road safety remains a challenging task?

- Pedestrians are the most vulnerable road users as they have **lesser protection in case of road accidents**. Adding to this motorists have little respect for the **rights of pedestrians**.
- Designated footpaths are routinely **encroached by parked vehicles** and shops especially in urban area, force the pedestrians to walk on roads.
- There is a lack of motivation for road safety **implementation measures** among enforcement agencies. Additionally, low number of prosecutions of lawbreakers on roads further increase the problems.
- There is a lack of **helping hand approach among people** at the time of accidents. This is due to consequential legal hearing and repeated appearances in the police station for investigation.
- It has pointed out that road infrastructure in India suffers from poor design quality, poor visibility and it overlooks road engineering which is inalienable part of road safety.
- Road Safety is a **State Subject**, this makes it difficult to meet the global road safety standards for instance **World Health Organisation (WHO)**, recommended countries to have a **national urban maximum speed limit of 50 km/hour**. Some states like Uttar Pradesh fall below this bracket with a 40 km/hour limit while those in Andhra Pradesh and Maharashtra can go up to 65 km/hour.

Suggestions to improve road safety

- **Pedestrian**
 - There is a dire need to segregate pedestrian road users from other vehicles to reduce conflict.
 - **Safe system approach** of World Health Organisation recognised that people's role in road safety cannot be eliminated completely by penalisation methods, rather the policy approach should be shifted towards **education and awareness** for all the strata of society.
- **Road**
 - The various studies highlighted that instead of expending or widening the roads, **application of scientific methods** such as construction of central barriers, road-side crash barriers can effectively minimise road accidents/fatality.
 - **Road Safety Action Plan** mooted by Asian Development Bank stressed the need of optimal mobility of traffic, promotion of traffic circulation, building the rush-hour lanes, and self-explained roads.
- **Vehicles**
 - **Voluntary fleet modernisation programme** is needed of hour. Despite of its initial aim of reducing pollution, it will facilitate the minimisation of road accident due to lack of safety measures in old vehicles.
 - Additionally, launching **Bharat New Vehicle Safety Assessment Programme** on line of star labelling, can effectively minimise the accidents.

Government steps for road safety

- **Draft National Action Plan** aimed at halving number of road accident deaths by 2020.
- **Pradhan Mantri Surakshit Sadak Yojana** launched with initial funding of about Rs 2,000 crore which will eliminate dangerous spots from highways.
- Recently government made it mandatory for two-wheeler from April 2019 onward to have **Anti-Break lock System** in order to improve control over the vehicle at the event of emergency braking.
- Government had signed the **Brasilia declaration in 2015**, committing to reduce road accident and fatality by half.
- **Motor Vehicles (Amendment) Bill, 2017**
 - Provisions for Non-Motorised Transport and pedestrian bicycle infrastructure.
 - It Sets up a National Road Safety Board that will advise the government on road design and motor vehicle safety.
 - It adds new provisions that allow the Centre to recall vehicles that pose a danger to users.
 - It has the provision of protection of Good Samaritan.

Impact of Road Accidents

- **Economics Cost:** Planning Commission of India, stated that over 3% of India's GDP is lost to road accidents annually, and this amounted to 3.8 lakh crore rupees in 2014.
- **Social Cost:** Loss of family member, especially earning member leads to poverty and social distress. Moreover, disabilities occurred in accident leads of loss of human productivity coupled with stigma.
- **Administrative cost:** Traffic management, enforcement of law, resource costs (clearance of damaged property), and insurance administration.

- **Government**

- Recently, Karnataka Good Samaritan and Medical Professional (Protection and Regulation during Emergency Situations) Bill, 2016, has been assented by The President, similar law should be enacted by other states. This legislation would give both legal and financial protection to good Samaritans and ensure immediate medical assistance for victims within the 'golden hour'.
- Providing more teeth to the traffic police infrastructure by hiring more personnel, installing cameras, and prosecuting lawbreakers can tame the menace of aggressive driving.
- Adopting **Vision Zero approach** in road safety governance. The Vision Zero approach pegs human life and health above all other transportation challenges.

3.17. NOBEL PRIZE IN ECONOMICS

Why in news?

American economists William Nordhaus and Paul Romer have been awarded the Nobel Prize for their work on understanding how economies can grow sustainably, by integrating innovation and climate with economic growth.

What is unique about this year's Nobel Prize winners?

This year's Nobel Prizes have been awarded to Economic theories with direct political and practical implications. Both the Laureates life work goes against the traditional model of growth and development. e.g. Growth model of Nobel Laureate Robert Solow which provides a relationship between growth of workforce and capital with long term economic growth.

Nobel Winners' Work

William Nordhaus

- Nordhaus believes that climate change can be addressed by ensuring correct pricing of polluting resources like fuel through government interventions e.g. higher taxes on petrol, diesel.
- His models that integrated population growth, fossil fuel use, income growth, and global warming became the basis for most calculations of the costs and benefits of various anti-global warming interventions.
- First person to create an "integrated assessment model", a quantitative model that describes the interplay between economy and climate.
- Putting a price on carbon is the main tool for alleviating climate change.

Paul Romer

- Technological innovation and skilling of workforce are the real sources of sustainable growth.
- Proposes the "endogenous growth model" where technological progress is seen as the outgrowth of businesses and other entities investing in research and development.
- A market led economy may undersupply technological innovations
- He recommended the use of subsidies, patents and other forms of government intervention to encourage economic growth through increased investment in technology.

1987 Nobel Prize winner Robert M Solow was among the first to identify technological progress as the key determinant of growth in the long run.

However for Solow, technological innovation was "exogenous" to his model.

3.18. GLOBAL COMPETITIVE INDEX 4.0

Why in news?

Recently, World Economic Forum released Global Competitive Index 4.0, under Global Competitive Report 2018.

About Global Competitive Index (GCI) 4.0

- It is a composite indicator that assesses a set of factors that determine an economy's level of productivity widely considered as the most important determinant of long-term growth.

Key Findings

- In the index U.S. topped the position, followed by Singapore and Germany at the second and the third positions respectively.
- Among the BRICS economies, China topped the list at 28th place with a score of 72.6, ahead of India (score of 62.0, ranked 58th), the Russian Federation (65.6, 43rd), South Africa (60.8, 67th), and Brazil (59.5, 72nd).



Observations for India and its neighbouring countries

- India, remained the South Asia's main driving force for competitiveness and its rank rose by five places from 2017, the largest gain among G20 economies.
- Top performers in the upper and lower middle-income brackets, such as China and India, are catching up with or even outperforming the average among high-income economies.

4. SECURITY

4.1. "LONE WOLF" ATTACKS

Why in News?

The Union Home Minister has said that threats posed by "lone wolf" attackers and "do it yourself" terrorists are a major challenge for the security agencies.

Lone Wolf Attacks

- A "lone wolf" is a person who prepares and commits violent acts alone, outside of any command structure and without material assistance from any group.

Conventional terror attacks	Lone wolf terror attacks
Mostly multiple perpetrators	Mostly single perpetrator
A definite command structure	Lack of hierarchical command structure
Family member, social circle, etc. likely to be aware/involved.	Family members are not likely to be aware of the radicalisation of the individual.

- It is an efficient way of spreading terror in hard-to-access places for organised terrorist groups.
- Volunteers are likely to come from the middle class and educated families.
- Prominent recent examples across the globe include Boston marathon bombing of 2013, Sydney hostage crisis of 2014, recent attacks in New York and London where vehicles were used to run over and kill a number of people.

Causes of Lone wolf Attacks

- **Alienation of communities:** As communities get isolated and become less trustful of law, they become alienated. It then provides grievances for terrorists to exploit as individuals from such communities tend to easily be self-radicalized by accessing material online.
- **Mental and psychological disorders** can also often be a trigger for carrying out random attacks by individuals.
- **Lax gun control** (for example in USA) create a fertile ground for carrying out of Lone wolf attacks.

Lone wolf attacks in India

- **Volatile neighbourhood of India acting as terror hotbeds, fast growing population especially youth with access to mass media and social media, heavy concentration of people in public areas with limited security and inadequate capacities of local police** increase India's vulnerability to lone wolf attacks.
- However various other factors tend to pose challenges in growth of lone wolf attacks in India:
 - Unlike in the US where sophisticated weapons can be easily bought by ordinary citizens, gaining access to such weaponry in India is difficult.
 - Indians have not displayed the psychological willingness to undertake high risk attacks.
 - The absence of past examples of lone wolf attacks in India inculcates the fear of the unknown in the minds of potential volunteers.

Some Steps Taken by India

- **Education and skilling** - Modernization of madrassas, Employment and skilling schemes for jobless youth like Nai Manzil, Himayat etc
- **Specific programmes** like 'Operation Chakravyuh' of the IB, where a dedicated set of officers monitor the web, tracing the activities of the youth who are in touch terror operatives.
- **NATGRID** is in the process of being scaled up.
- **National Cyber Coordination Centre(NCCC)** has been established as a cyber security and e-surveillance agency in India.
- **WHAM** (winning hearts and minds) strategy approach by security forces to prevent alienation.
- **Deployment of private security** at high value targets like malls, hotels and schools has been upgraded, which acts as a deterrent to an individual aiming to target them.

Challenges

- **Difficult to Apprehend:** Traditional terror groups with command and control "are easier for government to control. "Leaderless Resistance" like lone wolf attacks create an intelligence nightmare.
- **Use of Social Media by terror groups:**
 - Since the IS has been able to successfully recruit Indians via social media for the war in Syria it is a matter of time before they find recruits willing to employ violence in India itself.
 - The head of Al-Qaeda Indian Subcontinent called on Indian Muslims to follow the example of lone wolves in Europe and kill officers in India.
- **Possibilities of a complex Network:** Recent investigations have shown that often these attacks are not entirely independent and leaders operating remotely exercise various degrees of influence, acting as confidants and coaches and coaxing recruits to embrace violence.

Way Forward

- **Monitoring of Online content –**
 - Better vigilance regarding online radicalization by terror groups is required to curb this challenge.
 - Big data analytics must be used to discern the level of radicalisation of potential recruits, their networks and sources of information, funding and leadership in order to help unravel the roots of radicalisation.
- **Enhancing Social capital:** Enhancing the “sense of belonging” among different groups rather creating division can be of great impact. For example, preventing polarisation along religious or ethnic lines through effective social integration is needed.
- **Influence of Family and Peer Groups:** must be utilised by the state to pre-empt any radicalisation of young individuals to any terror group's ideology.
- **Providing access to Mental Healthcare and counselling.**
 - Helplines by professional counsellors to counsel against radicalization once it is reported by some friend or family member.
- **Coordination:**
 - Coordination and intelligence sharing between agencies such as IB, NIA, State police, etc is a must to prevent such incidents.
 - The nature of threat that groups like the IS represent is transnational in nature. Therefore there is also a need to improve intelligence sharing, faster processing of information requests, countering the finance mechanisms, and facilitate easier extradition.
- **Providing training to police personnel:** State police forces should be trained to develop counter-terror capabilities as they are the "first responders" when an attack takes place.

4.2. NATIONAL SECURITY COUNCIL

Why in news?

The Strategic Policy Group (SPG) formed to assist the National Security Council (NSC) has been reconstituted with National Security Advisor Ajit Doval as its chief.

Strategic Policy Group (SPG)

- Was set up in 1999 by Vajpayee Government.
- First tier of National Security Council structure
- Mandated to publish National Defense Review - a draft of short term and long term security threats and defense matters for consideration of NSC.

- Was earlier headed by Cabinet Secretary.

Salient features of the new notification

- NSA replaces Cabinet Secretary as the Chairman on SPG
- The SPG shall be the principal mechanism for inter-ministerial coordination and integration of relevant inputs in the formulation of national security policies
- The other members of SPG are Vice Chairman of NITI Aayog, Cabinet Secretary, three services chiefs, RBI Governor, Secretaries of External Affairs, Home, Defense, Finance, Defense Production, Revenue, Atomic

Energy, Space and National Security Council Secretariat besides Scientific Advisor to Defense Minister, Secretary (R) in Cabinet Secretariat and the Intelligence Bureau chief.

- The Cabinet Secretary will coordinate the implementation of SPG decisions by the Union Ministries and departments and State governments.

Challenges

- It has shifted the formal and *de jure* authority of national security from Cabinet Secretariat to National Security Council Secretariat.
- While Cabinet Secretary, the top civil servant of the country, has more institutional sanctity, National Security Advisor is a political appointee. NSA chairing SPG meetings means a huge shift of power towards Prime Minister's Office.
- A formal centralization of power towards PMO while marginalizing transitional institutional structures might affect checks and balances of the system. It might raise the issues of accountability of decisions.
- Shift from a silo-driver approach to a more integrated, centralized and authoritative approach.

National Security Council

- It is the top executive body of India which advises the Prime Minister's Office on matters of national security and strategic interests.
- Established in November, 1998.
- A three tier Organizational Structure consisting of Strategic Policy Group (SPG), National Security Advisor Board (NSAB) and National Security Council Secretariat (NSCS).
- Main task of SPG is to make policy recommendations to the NSC.

National Security Architecture of India

- Cabinet Committee on Security is the apex body for executive action on matters of national security.
- CCS is chaired by the PM and normally including the Ministers of Defence, External Affairs, Home and Finance.
- CCS is responsible for Political oversight and decision making on national security is exercised by the CCS, ensuring the democratic principle of civilian and political control of the apparatus.
- Both NSC and CCS have a common membership which helps in easier decision making and implementation.
- National Security Council, NSC and National Security Advisor, NSA advises the Prime Minister's Office on matters of National security.
- NTRO (National Technical Research Organization) is a technical intelligence agency under NSA.

Recent Reforms in National Security Architecture

- Three deputy National Security Advisors have been appointed instead of just one, while the post of military advisor has been revived
- A Defence Planning Committee, headed by the NSA, has been set up to align National security needs and defense resources into one decision making box.
- National Security Advisory Board has been revived with major appointments in recent months.

4.3. TERRORIST TRAVEL INITIATIVE

Why in news?

Recently Terrorist Travel Initiative under auspices of Global Counterterrorism Forum (GCTF), was launched.

Terrorist Travel Initiative

- It will bring together national and local governments, law enforcement and border screening practitioners, and international organizations to share expertise on how to develop and implement effective counterterrorism watch listing and screening tools.
- The initiative will develop a set of good practices which will reinforce countries and organizations to use border security tools prescribed in UNSC Resolution 2396 to stop terrorist travel.

About Global Counterterrorism Forum (GCTF)

- Launched in 2011, it is an **informal, apolitical, multilateral counterterrorism (CT) platform**.
- It develops good Practices and tools for policy-makers and practitioners to strengthen CT civilian capabilities, national strategies, action plans and training modules.
- The GCTF has 30 members. India is a founding member of GCTF.

5. ENVIRONMENT

5.1. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE REPORT

Why in news?

The IPCC has released its Special Report titled “**Global Warming of 1.5°C**”, first in a series of Special Reports to be produced in the IPCC’s Sixth Assessment Cycle.

Key findings of the Report

The report documents glaring evidence of the devastating impacts of climate change on the poor and on developing countries.

- **Present global warming status:** Human-induced global warming has in 2017 **already reached 1°C** above pre-industrial levels; the current climate efforts of countries will take the world to 1.5°C between 2030 and 2052.
 - Since 2000, the estimated level of human-induced warming has been equal to the level of observed warming due to contributions from solar and volcanic activity over the historical period.
- **Impacts of global warming at 1.5°C:** Impacts at 1.5°C are far greater than anticipated and estimated earlier.
 - Accordingly, the world would witness greater sea level rise, increased precipitation and higher frequency of droughts and floods, hotter days and heatwaves, more intense tropical cyclones, and increased ocean acidification and salinity.
 - Warming greater than the global average has already been experienced in many regions and seasons, with average warming over land higher than over the ocean.
 - Depending on the temperature dataset considered, 20-40% of the global human population live in regions that, by the decade 2006-2015, had already experienced warming of more than 1.5°C above pre-industrial in at least one season.
- **Impact of transition from 1.5°C to 2°C:** The report points out that the risk transition from 1.5°C to 2°C is very high and that the effects at 2°C will be more devastating than what IPCC’s Fifth Assessment Report had indicated.
 - Coastal nations and agricultural economies like India would be the worst affected.
 - Decline in crop yields, unprecedented climate extremes and increased susceptibility could push poverty by several million by 2050.
- **Limited availability of Carbon Budget:** If global emissions continue as per the commitments made under Paris Agreement, the carbon budget (the amount of CO₂ that the world can emit) for 1.5°C warming will be exhausted by 2030.
 - In order to limit warming at 1.5°C, the world will have to reduce CO₂ emissions by 45 per cent by 2030 from the 2010 levels and reach net-zero emissions by 2050.
- **Effect of limiting global warming to 1.5°C:** The report highlights a number of climate change impacts that could be avoided by limiting global warming to 1.5°C compared to 2°C, or more. For instance,
 - By 2100, global sea level rise would be 10 cm lower with global warming of 1.5°C compared with 2°C.
 - The likelihood of an Arctic Ocean free of sea ice in summer would be once per century with global warming of 1.5°C, compared with at least once per decade with 2°C.
 - Coral reefs would decline by 70-90 percent with global warming of 1.5°C, whereas virtually all (> 99 percent) would be lost with 2°C.

What is the IPCC?

- The Intergovernmental Panel on Climate Change (IPCC) is the UN body with 195 member states for assessing the science related to climate change.
- It was established by the United Nations Environment Programme (UNEP) & the World Meteorological Organization (WMO) in 1988 to provide policymakers with regular scientific assessments concerning climate change, its implications and potential future risks, as well as to put forward adaptation and mitigation strategies.

Way Forward

- **Keeping global warming within 1.5°C is very difficult but required:** Keeping the focus on 2.0°C target would be disastrous for the poor and for developing countries. The following Pathways examined by the report to limit warming to 1.5°C can be considered:

- India must take the lead in forming a global coalition for a 1.5°C world to save its poor and vulnerable population.
- Investments in low-carbon energy technologies and energy efficiency would need to approximately double in the next 20 years and investment in fossil-fuel extraction and conversion decrease by about a quarter.
- **Require a UNFCCC-plus approach:** Climate efforts cannot be restrictive to the UNFCCC and the Paris Agreement. The world needs to think and devise more forums and venues to address climate change.
- **Equity is essential and must be revisited:** IPCC Report points out that “social justice and equity are core aspects of climate-resilient development pathways that aim to limit global warming to 1.5°C”. The world, however, requires a new formulation of equity in which every country must act now and actively raise its level of ambition.
 - The developed countries must take the lead by rapidly de-carbonising their economies as well as reducing consumption.
 - Developing countries will have to pursue low-carbon pathways more vigorously and should limit addition of fossil fuel assets going ahead.
- **Enhancing sinks in natural ecosystem:** All pathways to reduce emissions, to keep the warming within 1.5°C require Carbon Dioxide Removal (CDR) in the Agriculture, Forestry and Other Land Use (AFOLU) sector in varying degree. Sequestering CO₂ in AFOLU sector will require incentivising billions of farmers and forest-dwellers to pursue sustainable practices that enhance carbon sinks. The world must come together to devise a mechanism to do this.
- **Acting on all fossil fuels is must:** The IPCC report emphasises the need to reduce coal consumption rapidly, though it allows for the use of gas with carbon capture and storage. The world needs to act on all fossil fuels simultaneously.

What happens at 2°C that does not happen at 1.5°C?

- This could prevent around 3.3 million cases of dengue every year in Latin America and the Caribbean alone.
- A **World Bank report** on Climate Change and Health (2015) that an additional 150 million people could be at risk from malaria if the temperature was allowed to increase beyond 2°C.
- A study in the journal **Climate Change** in 2016 claimed that the world could have 25 million fewer undernourished people by the end of the century, if the 1.5°C goal was achieved.
- As per **Nature Climate Change** (2018), 1.5°C could prevent 153 million premature deaths due to air pollution by 2100, as compared to the 2°C scenario.
- About 350 million additional people could be exposed to deadly heat waves if the warming increased to 2°C as compared to 1.5°C.
- A **UNDP report** in 2016 claimed that a 1.5°C strategy could create double the number of jobs in the energy sector by 2050.

Thus, limiting global warming to 1.5°C should be targeted because

- It would **reduce challenging impacts** on ecosystems, human health and well-being, making it easier to achieve the United Nations Sustainable Development Goal.
- Allowing the global temperature to temporarily exceed or ‘overshoot’ 1.5°C would mean **a greater reliance on techniques** that remove CO₂ from the air to return global temperature to below 1.5°C by 2100. The **effectiveness of such techniques are unproven** at large scale and some may carry significant risks for sustainable development.

5.2. OCEAN CLEANUP

Why in news?

Recently, the Ocean Cleanup project was started in the Pacific Ocean.

Background

- Situation in India:** According to Litterbase database, seas near Mumbai, Kerala and the Andaman and Nicobar Islands are among the worst polluted in the world.
- Global Scenario:** More than 8 million tonnes of plastic leaks into the ocean each year – equal to dumping a garbage truck of plastic every minute.
- Every year Marine plastic gets trapped in the **gyres** (revolving water system in the world's oceans) which breaks down into **micro-plastic** and becomes harmful for marine as well as human life. The **Great Pacific Garbage Patch** is the largest collection of marine debris in the North Pacific Ocean gyre.
- Financial cost:** US\$13 billion a year is the cost of environmental damage as plastic wreaks havoc on fisheries, marine ecosystems and economies.
- Composition:** About 60-90 per cent of marine litter is made up of plastic polymers, plastic bags, fishing gear and food and beverage containers.
- According to some estimates, at the rate we are dumping items such as plastic bottles, bags and cups after a single use, by 2050 oceans will carry more plastic than fish and an estimated 99 per cent of seabirds will have ingested plastic.

WESTERN GARBAGE PATCH One area of marine debris concentration is located off the coast of Japan, which researchers believe to be a small recirculating gyre.

SUBTROPICAL CONVERGENCE ZONE This area, located north of the Hawaiian archipelago, has an abundance of marine life and marine debris, and is one of the mechanisms for accumulation of debris in the Hawaiian Islands.

EASTERN GARBAGE PATCH Concentration of marine debris have been detected in an area midway between Hawaii and California Known as the Northern Pacific Subtropical High, or the "eastern garbage patch." Some speculate this patch is roughly the size of Texas, though its exact area is unknown.



OTHER GYRES WITH MARINE DEBRIS

Little research has been conducted to date on marine debris in other areas. It is believed that each of the world's five major gyres contain similar accumulations of trash, but no one can say for sure how large these areas are, and no accurate estimate exists of how much debris there is in the ocean.

Impact of Increasing level of Plastics in Ocean

- Bio-accumulation:** Many persistent organic pollutants (for example, pesticides, PCBs, DDT, and dioxins) float around the oceans at low concentrations, but their hydrophobic nature concentrates them on the surface of plastic particles. Marine animals mistakenly feed on the microplastics, and at the same time ingest the toxic pollutants. The chemicals accumulate in the animal tissues and then increase in concentration as the pollutants are transferred up the food chain.
- Leaching of harmful chemical:** As the plastics degrade and become brittle, they leach out monomers like Bisphenol A which can then be absorbed by marine life, with relatively little known consequences.
- Threat to Biodiversity:** Beside the associated chemical loads, ingested plastic materials can be damaging for marine organisms, as they can lead to digestive blockage or internal damage from abrasion. There is still much research needed to properly evaluate this issue.
- Source of vector borne diseases:** Being so numerous, microplastics provide abundant surfaces for small organisms to attach. This dramatic increase in colonization opportunities can have population-level consequences. In addition, these plastics are essentially rafts for organisms to travel further than they usually would, making them vectors for spreading invasive marine species.

Microplastics

- Microplastics or Microbeads** are plastic pieces or fibre which is very small, generally measuring less than 1mm.
- They have a variety of uses, most notably being personal care products like toothpaste, body creams, clothing and industrial use.
- They have an ability to spread easily and provide silky texture and colours to the product. Thus, adding visual appeal of the cosmetic products.

Challenges in Tackling Plastics Debris

- Ubiquitous Transboundary Movement of marine plastics and microplastics:** It is becoming a major concern as their property of durability makes their debris remain intact for long period of time throughout the ocean.
- Ineffective Waste Collection:** Greatest burden of plastic waste entering the sea is likely to arise where waste collection systems are ineffective or even non-existent.
- Lack of resources with less developed countries:** Less developed and developing countries in particular may face challenges in managing the rapidly growing volume of plastic waste.

Other Steps taken for tackling Plastic Debris

- **Blue Flag Beach Certificate Standards**
 - Certificate is given to environment-friendly and clean beaches, equipped with amenities of international standards for tourists. These standards were established by the Copenhagen-based Foundation for Environmental Education (FEE) in 1985.
 - **Chandrabhaga beach on the Konark coast of Odisha** will be the first in Asia to get the Blue Flag certification
- **UN Environment launches #CleanSeas campaign:** Its objective is to eliminate major sources of marine litter, Microplastics in cosmetics and the excessive, wasteful usage of single-use plastic by the year 2022.
- **Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal:** It aims at preventing and minimizing the generation of wastes including those ending up in the ocean. Much of the marine litter and microplastics found in the sea may be determined as ‘waste’ as defined under the Convention.
- **Stockholm Convention on POPs:** It aims to protect human health and the environment from POPs (organic chemicals that persist in the environment, bio accumulate in humans and wildlife, have harmful effects and have the potential for long-range environmental transport). Plastics can adsorb POPs such as PCB, DDT and dioxins and these are frequently detected in marine plastic litter.
- **The Honolulu Strategy:** It is a framework for a comprehensive and global collaborative effort to reduce the ecological, human health, and economic impacts of marine debris worldwide.

5.3. MINIMUM RIVER FLOW FOR GANGA

Why in News?

Recently National Mission for Clean Ganga has laid down the flow specifications for river Ganga to maintain a minimum river flow or ecological flow.

Central Water Commission (CWC)

- It is premier Technical organization under Ministry of Water Resources, River Development and Ganga Rejuvenation.
- It undertakes measures for control, conservation and utilization of water resources throughout the country and has been monitoring water quality of river water since year 1963.

More on news

- Central Water Commission would be the designated authority to collect relevant data and submit reports on a quarterly basis to the NMCG.
- The compliance of minimum environmental flow is applicable to all existing, under-construction and future projects except the mini and micro projects which do not alter the flow characteristics of the river significantly.
- The existing projects would have to comply with the norms within a period of three years

About Minimum River Flow

- Minimum River Flow or Minimum Environmental Flow or E-flow is a regime of flow in a river that mimics the natural pattern. It refers to the water considered sufficient for protecting the structure and function of an ecosystem and its dependent species.
- It means enough water is to be released in the downstream of the river system after utilizing the water for the development projects in order to ensure downstream environmental, social and economic benefits.
- It is either defined in **terms of percentage of the average flow** (monthly average or average of any predefined number of days) or in **terms of cubic meters of water flow per second**.
- It will also ensure demand side management of water as it will help to reduce water withdrawal from the river by adopting scientific practices in irrigation, reusing and recycling of water and regulating groundwater withdrawals for various purpose
- Uninterrupted flow of water in Ganga is also important to keep it clean through its natural ecological functions and processes.



Concerns

- **Inadequate minimum flow norms:** Under Draft Ganga Act, Justice Girdhar Malviya Panel suggested stricter provision than these specifications to increase accountability and responsibility for cleanliness and uninterrupted flow (Niarmalta and Aviralta).
- **Lack of guidelines for projects:** Along with minimum flow, guidelines also need to be laid out for the modifications that projects need to make.
- **No mention of aquatic biodiversity:** The very purpose of e-flow is to ensure free migration of these species. But the notification is completely silent on this aspect thus, seemingly defeating the purpose of this exercise.
- **Environmentalists view:** Some environmentalists are of the view that all the hydroelectric projects as well as mining in Haridwar-Kumbh region should be banned completely to endure natural flow of the river.

5.4. DRAFT RIVER BASIN MANAGEMENT BILL, 2018

Why in News?

Recently, Draft River Basin Management Bill, 2018 was released by government.

Background

- **Second Administrative Reform Commission (2008)** had recommended that **River Basin Organisations (RBOs)** should be set up for each inter-State river, as proposed by **National Commission for Integrated Water resources Development, 1999** by enacting a legislation to replace the **River Boards Act, 1956**.
- **River Basin:** A geographical area determined by the watershed limit of the system of waters, flowing into the ocean/sea either directly or through another sovereign nation or into a natural lake having no outlet.
 - It is considered as the basic hydrological unit for planning and development of water resources.
 - There are **13 Major river basins in India** and cover 80 per cent of the population and 85 per cent of total river discharge.
 - The major river basin is **the Ganga-Brahmaputra-Meghna**, which is the largest with catchment area of about 11.0 lakh km² (more than 43% of the catchment area of all the major rivers in the country).

Principle governing River Basin Development, Management and Regulation according to Draft.

- **Cooperation:** Basin States shall participate and cooperate in best interest of the nation, in the development, management and regulation of waters of inter-State river basin for the mutual benefit of the basin States and the Indian Union.
- **Equitable and Sustainable Utilisation of water:** Basin States shall in their respective territories develop, manage and regulate the waters of an inter-State river basin in an equitable and sustainable manner.
- **Water as a Common Pool Community Resource:** Water needs to be managed as a common pool community resource held, by the State, under public trust doctrine to achieve food security, support livelihood, and ensure equitable and sustainable development for all.
- **Demand Management:** The demand management of water needs to be given priority, especially through:
 - Evolving an agricultural system which economizes on water use and maximizes value from water.
 - Bringing in maximum efficiency in use of water and avoiding wastages.

Advantage of River Basin Management (RBM)

- **Economic Importance:** River Basin absorb and channel the run-off from snow-melt and rainfall, which can provide fresh drinking water as well as access to food, hydropower, building materials (e.g. reeds for thatching), medicines and recreational opportunities.
- **Control Water Pollution:** They are natural 'filters' and 'sponges', and play a vital role in water purification, water retention and regulation of flood peaks.
- **Ecosystem Service:** They act as a critical link between land and sea, providing transportation routes for people, and making it possible for fish to migrate between marine and freshwater systems.
- **Biodiversity Conservation:** RBM combine both terrestrial (e.g. forest and grassland) and aquatic (e.g. river, lake and marsh) components, thereby providing a wide diversity of habitats for plants and animals.

- **Need:** A lack of integrated river basin management often results in decision-making dominated by powerful economic sectors such as navigation, dam construction and intensive agriculture.

Highlights of Bill

- **Objective:** It proposes optimum development of inter-State rivers by **facilitating inter-State coordination** ensuring scientific planning of land and water resources taking basin/sub-basin as unit with unified perspectives of water in all its forms (including soil moisture, ground and surface water) and ensuring comprehensive and balanced development of both catchment and command areas.
- **Repeal River Boards Act:** Bill seeks to repeal the River Boards Act, 1956, which was enacted with a declaration that centre should take control of regulation and development of Inter-state rivers and river valleys in public interest. However, not a single river board has been constituted so far.
- **River Basin Authorities (RBA):** It seeks to establish 13 RBAs for development, management, and regulation of waters of an inter-state river basin, consisting of a Governing Council and an Executive Board.
 - **Executive Board:** It will comprise the Chairman and administrative secretaries of the concerned state governments to formulate a **River Basin Master Plan** for the inter-state river basin which analyze the river basin characteristics, environmental needs, assessment of the effects of existing legislation etc.
 - **Governing Council:** It will consist of Chief Ministers of basin states, and will approve the River Basin Master Plan, resolve conflicts among states, Review and give clearance to new water resources projects etc.
 - **RBA will be setup** for river basins of Ganga, Indus, Godavari, Mahanadi, Mahi, Narmada, Pennar, Cauvery, Krishna, Tapi, Subarnrekha, Brahmani-Baitarini and Brahmaputra- Barak-inter-state rivers of north-east.
- **Binding Decision:** Recommendations of the authority will be binding on all states within the river basin, except those concerning sharing of inter-state river waters. The dispute between two or more states will go to the **Inter-State River Water Disputes Tribunal** only if governing council of the concerned authority fails to address it.

5.5. INDIA'S 1ST SOIL MOISTURE MAP

Why in news?

India Meteorological Department (IMD), for the first time, has provided a country-wide soil moisture forecast.

Details of Soil Moisture Map

- This forecast is a joint exercise by IIT Gandhinagar and the India Meteorological Department (IMD) which provides soil moisture forecast at **seven and 30-day lead times**.
- The product, termed '**Experimental Forecasts Land Surface Products**' has been developed using the '**Variable Infiltration Capacity**' model that takes into consideration soil, vegetation, land use and land cover among other parameters.
- The countrywide forecast prepared at the end of the monsoon season suggests **deficit soil moisture conditions are likely in Gujarat, Bihar, Jharkhand, Tamil Nadu and southern Andhra Pradesh**.
- It also indicates that soil moisture conditions in **western Uttar Pradesh, Bundelkhand, and Chhattisgarh are likely to be normal or surplus** at the start of the Rabi sowing season.

Advantages of having Soil moisture forecast

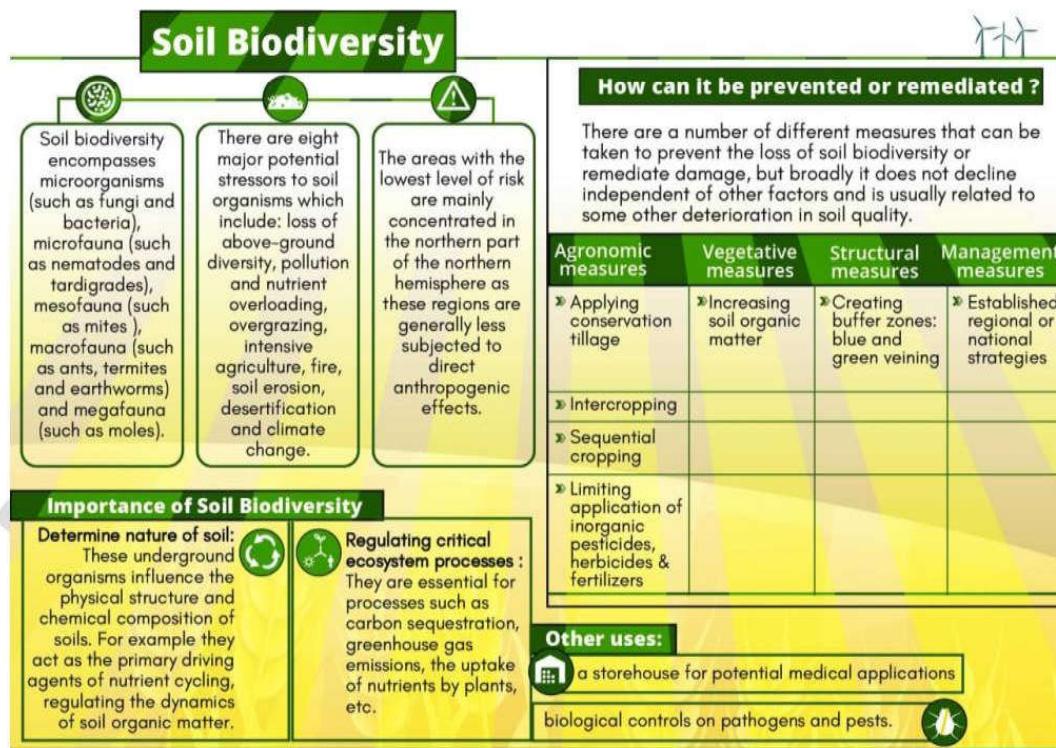
- **Irrigation requirements:** Soil moisture is crucial for agriculture since it directly affects crop growth and helps assess the irrigation requirement for the area. For e.g. Based on observed conditions parts of Andhra Pradesh are deficient in terms of soil moisture right now. This means that if there is not enough rainfall in one or two months, these are regions which will demand heavy irrigation whether that comes from groundwater or surface water storage.
- **Better planning:** Timely soil moisture forecasts will help target interventions, like in terms of seed varieties for better planning in agriculture. For e.g. the total area sown under rabi crops is around 625 lakh hectares of which wheat takes up 300 lakh hectares. Timely forecasting will improve productivity and optimizing input cost for wheat.
- **Increase farmer's income:** In areas like Bundelkhand, Bihar, in low lying areas of Seemanchal and Kosi belt, where most farmers are dependent on rabi crop and keep their land fallow or just grow some fodder crop during the kharif season, the advance forecasting will help augment farmers' income and provide livelihood security.
- **Understanding crop pattern:** Essentially soil moisture gives us more information on what is needed for crop growth in different parts of the country such as crop pattern, type of crops to be grown etc.

Importance of Soil moisture

- It acts as a nutrient itself and regulates soil temperature.
- It serves as a solvent and carrier of food nutrients for plant growth.
- Yield of crop is more often determined by the amount of water available rather than the deficiency of other food nutrients.
- Soil forming processes and weathering depend on water.
- Microorganisms require water for their metabolic activities.

5.6. GLOBAL SOIL BIODIVERSITY ATLAS

- Recently, the Global Soil biodiversity Atlas placed India among countries whose soil biodiversity faces the highest level of risk.
 - It is a joint venture of the Global Soil Biodiversity Initiative and the European Commission Joint Research Centre.
 - Its findings were published as part of the Living Planet Report, 2018 (published by WWF every two years).
- Some of the important findings of the Living Planet Report, 2018 were:
 - The current rate of species loss is 100 to 1,000 times higher than only a few hundred years ago. Ten thousand years ago that ratio was probably reversed.
 - 60% of all animals with a backbone were wiped out due to human activity from 1970 to 2014. The report says that the Earth has entered the sixth mass extinction event in the last half-a-billion years.
 - There has been a decline in mangroves by 30% to 50% over the past 50 years.
 - Almost 50% of the globe's shallow-water reefs have declined in the last 30 years.



5.7. INDUSTRIAL DISASTERS IN INDIA

Why in news?

Recently, 9 people died in blast and fire in the gas pipeline during maintenance work in SAIL's Bhilai plant.

Industrial Disasters- A background

- The ever-growing mechanisation, electrification, chemicalisation and sophistication have made industrial jobs more and more complex and intricate leading to increased dangers to human life in industries through accidents and injuries.
- India has continued to witness a series of industrial disasters during the last 3 decades after the Bhopal gas tragedy, including a chlorine gas leak in Vadodara (2002) that affected 250 people, a toluene fire at Mohali (2003), a chlorine gas leak at Jamshedpur (2008), and more recently, boiler furnace explosion at the NTPC Unchahar power plant (2017) which killed 43, affecting more than 80 people.
- A study by the British Safety Council based on ILO data found that 48,000 people on average die in the country per annum due to work-related hazards. It observed that as many as 38 fatal accidents take place every day in the construction sector in the country.
- As per NCRB data, Electrical faults seem to be the major reason for 8% of the deaths in industries.

Reasons for Industrial disasters

On part of Industries

- **Low awareness:** Most companies are not aware of the safe practices in terms of what is a safe machinery, or what environment it will be used in.
- **Unsafe practices:** For eg- quarrying leading to roof collapse in coal mines, workers working without masks in areas prone to poisonous gas leakage, contract workers **not given adequate personal protection equipment (PPE)** etc.
- **Lack of regulations:** Storing and handling hazardous chemicals by factories in unorganized sector poses serious and complex risks to people, property and the environment.
- **Poor management systems:** Due to poorer reporting systems, many accidents and deaths go unreported.
- **Unawareness about disaster management:** Industries do not regularly inform the larger public about the disaster management plan in case an accident occurs.

On part of Government

- **Lack of centre-state coordination:** Labor falls in the concurrent list, so the Centre frames the laws while the states have the responsibility of implementing them. But the multiplicity of legislations and changing regulations from state to state often pose compliance problems.
- **Relaxation of Industrial Regulations:** Industrial regulation has, unfortunately, come to be viewed as a barrier to ease of doing business in India. This is a result of inefficiency and corruption.
- **Safety audits:** Owing to poorly staffed labour departments, safety audits of hazardous manufacturing units still remain a distant dream although the Factories Act prescribes a mandatory annual examination.
- **Capacity building at state level:** The inability of states to strengthen their labour bureaus and environment protection units caused unsafe factories to mushroom to meet the growing demand for industrialization.

On part of workers and public

- **Lax attitude of workers:** Even if workers are provided with PPEs they are generally reluctant to use them as they feel it hinders their comfort while on work. Also, most of the workers are inattentive while safety trainings.
- **Lack of Public awareness:** Public outside the premises are unaware of the nature of industry and the hazards it poses to health and life. They are also not aware of what to do when an accident occurs around.

Government/Judicial Actions taken to tackle Industrial Disasters

- **Environment Impact Assessment:** It introduced the concept of environmental appraisal of all projects and incorporating ecological and safety conditions while approving new ventures. Also, it has provisions for management of hazardous waste.
- **Extended Risk scope:** In 1987, the Factories Act, 1948, was amended to extend the scope of risk from hazardous industries. What used to be a narrowly defined scope covering only workers and the premises of the factory was extended to the general public in the vicinity of the factory. The changes also provided for appraisal when hazardous industries were being set up or expanded.
- **Handling hazardous chemicals & wastes:**
 - Manufacture, Storage and Import of Hazardous Substances Rules, 1989, details and catalogues chemicals deemed "hazardous" entering the country, the port of entry and the quantity imported.
 - The Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008, provide for means of safe storage and disposal of "hazardous waste" with the help of central and state pollution control boards.

- **Addressing chemical disasters**
 - The Chemical Accidents (Emergency Planning, Preparedness, and Response) Rules, 1996, addresses gas leaks and similar events.
 - The **National Disaster Management Agency (NDMA) guideline on chemical disasters** was published in 2007 for a “proactive, participatory, well-structured, failsafe, multi-disciplinary and multi-sectoral approach” to tackle chemical disasters.
- **Compensation liability**
 - **Concept of Absolute Liability:** As defined by the Supreme Court in 1986, the enterprise owes an absolute and non-delegable duty to the community to ensure that no harm results to anyone on account of hazardous or inherently dangerous nature of the activity which it has undertaken. Compensation needs to have a “deterrent effect” and must reflect the “magnitude and capacity of the enterprise”.
 - **Public Liability Insurance Act (1991):** It was supposed to provide for immediate and interim relief to disaster victims till their claims of compensation were finally decided. Owners of industries dealing in hazardous substances are required to take out insurance policies under this Act.
 - The NGT Act provides for the “**principle of no-fault liability**”, which means that the company can be held liable even if it had done everything in its power to prevent the accident.
 - **The Civil Liability for Nuclear Damage Act, 2010,** is the most recent law that has provision for compensation of more than Rs.100 crore, which could reach up to Rs.1,500 crore, depending on severity.
- **For worker safety:** ILO’s Promotional Framework for Occupational Safety and Health Convention, 2006, ratified by India in 2017, aims at promoting a preventative safety and health culture and progressively achieving a safe and healthy working environment.

Way Forward

- **Creation of Buffer zone:** It is essential for government to ensure an adequate buffer zone and not permit people to stay around in that zone or allow any business shops or constructions therein. Sufficient space must be kept in the buffer zone so that if something goes wrong or an accident occurs, the people are not affected.
- **Location of Industry:** The EIA regulations mandated under Environment Protection Act must be strictly enforced. Local authorities especially Gram Sabha must be given adequate weightage for their inputs in regards to EIA assessment.
- **Disaster Management Plan:** Industries should have disaster management plans that local authorities—which include hospitals, fire stations and the like—will know and should communicate to the local people what they are supposed to do in the event of a disaster. These plans are also needed to be updated regularly.
- **Consolidation of rules and laws:** India should formulate and implement a comprehensive safety legislative framework in accordance with the current industry best practice and community expectations.
- **Enhance monitoring standards:** India needs a single national authority to monitor workplace standards and increasing inspection as recommended by a Labour Working Group constituted by the Government back in 2008-09.
- **Safety Audit reforms:** At present, safety audits are primarily focused on occupational safety and health issues and lack sufficient technical rigour. The audit scope and methodology should be expanded to include auditing of major incident event scenarios and controls identified and assessed for each scenario. The audits should seek evidence on performance assurance of safety controls.
- **Institutional capacity building:** Investigative and technical rigour should be enhanced in the inspections that are being undertaken by the inspectorate.
 - There should be a **national capacity building programme** for inspectors in process safety, incident investigation, and auditing and inspections.
 - Universities and professional institutions should contribute to the **long-term skill development** of inspectorates.
 - There should be **international cooperation** in research and training programmes related to safety and health inspections.
- **Identification of common safety incidents:** Within the premises of the industries, the 5 most common causes of safety incidents and preventative measures have been identified as follows:
 - **Moving machinery** – Isolate, lock or pin all energy sources before any machinery is accessed.
 - **Falling from height** – Provide regular training, appropriate harnessing equipment and ensure checks are in place when working at height.
 - **Falling objects** – Ensure regular checks are in place to remove or secure objects in risk areas.
 - **On-site traffic** – Ensure all traffic on the site is operated safely, including road, rail and pedestrians, and remove all unnecessary traffic.
 - **Process safety incidents** – Identify potential process safety hazards that could cause explosions or fires and take adequate precautions.
- **Strict implementation of safety norms:** Every factory management should set up a **statutory safety committee** responsible for ensuring the strict implementation of occupational safety norms.

5.8. EARMARKING ECO-SENSITIVE AREA

Why in news?

Centre has released a draft notification for earmarking Eco-Sensitive Area (ESA) in Western Ghats.

Background information

- In 2010, the Central government began the process of declaring ESAs by constituting the **Madhav Gadgil committee**. The recommendations were not implemented after protest from all states, especially Kerala, saying that it hampered development and large habitations.
- Subsequently, a **High-Level Working Group (HLWG)** under former ISRO chairman K Kasturirangan gave a report in 2013 recommending 37 per cent (about 60,000 sq km) of the Western Ghats as ecologically sensitive areas. However, the states were still at loggerhead.
- Centre has issued 3 draft ESA notifications for consultation with states since 2014. This is the 4th such draft proposing 56,825 sq km of Western Ghats as 'no go' zone which covers nearly 37% of Western Ghats and is in line with Kasturirangan Committee recommendations.
- The process to notify ESA delayed when Karnataka, Maharashtra and Tamil Nadu raised their objections on recommendation of the HLWG, leaving the ecologically fragile region in Western Ghats open for further exploitation.
- The NGT on August 24, 2018 directed the ministry to finalise the notification within a period of six months without making any alteration in the draft of February last year. So, the **Centre will now have to finalise it by February next year**.

Eco Sensitive Zones (ESZ)/ Eco-Sensitive Area (ESA)

- ESZs are ecologically important areas notified under the Environment Protection Act to be protected from industrial pollution and unregulated development. According to the Environment (Protection) Act, 1986, the government can prohibit industrial operations such as mining, sand quarrying and building thermal power plants in sensitive areas.
- To categorise an area as ecologically sensitive, the government looks at topography, climate and rainfall, land use and land cover, roads and settlements, human population, biodiversity corridors and data of plants and animal species.
- As per orders of the Supreme Court, no project can be allowed within 10 km of the boundary of national parks and sanctuaries without the approval of the National Board of Wildlife (NBWL), the highest body on wildlife regulatory issues, unless a site-specific Eco-Sensitive Zone (ESZ) is notified around that park or sanctuary.
- **Purpose for declaring ESZ** around National Parks and Sanctuaries is to create some kind of "shock absorber" for the protected areas.
 - They would also act as transition zone from areas of high protection to areas involving lesser protection.
 - The activities in the ESZ would be of a regulatory nature rather than prohibitive nature, unless and otherwise so required.
- **Extent of ESZ:** The width of the ESZ and type of regulations would differ from one protected area (PA) to other. However, as a general principle the width of the ESZ could go up to 10 kms around a PA (may not be uniform all around it) as provided in the Wildlife Conservation Strategy-2002.
 - In case where sensitive corridors, connectivity and ecologically important patches, crucial for landscape linkages, are even beyond 10 kms width, these should be included in the ESZ.
- **Nature of Activities in ESZ:** While some of the activities could be allowed in all the ESAs, others will need to be regulated/ prohibited. However, which activity can be regulated or prohibited and to what extent, would have to be PA specific. There are 3 categories of activities-
 - **Prohibited-** commercial mining, polluting industries, major hydroelectric projects etc.
 - **Restricted with safeguards (Regulated)** - Felling of trees, Establishment of hotels and resorts, Drastic change of agriculture system, widening of roads, introduction of exotic species etc.
 - **Permissible-** Rain Water Harvesting, Organic farming, Ongoing Agricultural Practices etc.

Problems associated with ESZ

- States like Tamil Nadu, Andhra Pradesh, Jharkhand and Goa etc. kept the mining areas out of ESZs, irrespective of their ecological value. Besides, **no ground investigation** has been done in most proposals. The areas are randomly marked on topographic sheets.
- Most proposals **do not follow ecological aspects** of the objective of this exercise. In most of the proposals, distance from the PA boundary is made the only criterion for defining ESZ and factors such as habitat connectivity and ecological integrity of the region are rarely considered for identifying the zones.
- States hesitate to finalize ESZ as it might **hamper their finances** due to closure of industries and tourism activities.
- There are **no quantifiable criteria** defined for including or excluding an area in the ESZ, leaving it to the forest officials to arbitrarily take decisions.

- People who are living in biodiversity rich areas are **mostly excluded from the consultation process** to identify the ESZ. However, they are the ones who will be directly affected by regulated or restricted activities.
- Though ESZ does not affect the ownership rights of people on land resources, it **restricts land-use change**. The tribal people who mostly reside in these areas are affected as their livelihood mostly depend on forest products.

Way Forward

- As the experts are attributing the recent catastrophic floods in Kerala to the exploitative activities in Western Ghats, the issue of ESZ gains prominence. There needs to be a balance between the development and biodiversity conservation.
- Centre should take all the states on board along with due representation from the local population in deciding the ESZ.
- The declaration of ESZ should be in line with the rights given to tribal population under Forest Rights Act-2006 and The Provisions of the Panchayats (Extension to the Scheduled Areas) Act, 1996(PESA-1996).

5.9. BANNI GRASSLAND

Why in news?

Nomadic tribes (Maldhari) are leaving their villages in Banni region due to water scarcity.

About Banni grassland

- The Banni grassland of Gujarat (near Rann of Kutch) is the largest natural grassland in the Indian subcontinent known for its scarce rainfall and semi-drought conditions.
- The land of Banni is formed out of ocean clay, so it includes an element of salt from very beginning. This land is formed out of alluvial and clayey sand..
- Migratory pastoralism has been followed here from centuries with a broader geographical landscape that included Sindh in Pakistan and even extended into parts of Baluchistan and Afghanistan.
- Now, Banni is divided into eastern and western parts separated by National Highway 341, which leads to the India-Pakistan International Border.
- There are 22 ethnic communities living in the area called **Maldhari pastoralists** ('mal' means animal stock and 'dhari' means keeper).
- A huge freshwater lake locally known as **Chhari-Dhand** is a prominent feature of the Banni grassland.
- It has been identified as one of the best area for reintroduction of Cheetah by Wild Life Institute of India as the area includes Kala Dungar or Black hills where large number of jackals are present.

Chhari Dhand

- 'Chhari' means salt affected and 'dhand' means shallow wetland.
- Chhari-Dhand is a legally protected wetland conservation reserve.
- The Banni Grasslands and Chhari-Dhand form one of the most important bird areas in the desert ecosystems of India.

5.10. EURASIAN OTTER

Why in news?

Recently scientist confirmed the presence of Eurasian otter in Western Ghats.

About Otter

- They are carnivorous mammals and adapt to a variety of habitats ranging from marine to freshwater environments.
- India is home to 3 of the 13 species of otters found worldwide. These are
 - **Eurasian Otter (*Lutra lutra*)**: IUCN: Near Threatened; CITES Appendix I; Wildlife (Protection) Act Schedule II.
 - **Smooth-coated Otter (*Lutra perspicillata*)**: IUCN: Vulnerable; CITES Appendix II; Wildlife (Protection) Act Schedule II.
 - **Small-clawed otter (*Aonyx cinereus*)**: IUCN: Vulnerable; CITES Appendix II; Wildlife (Protection) Act Schedule II.
- Though the Eurasian otter has been recorded historically from the Western Ghats (Coorg in Karnataka and Tamil Nadu's Nilgiri and Palani hill ranges), this is the first photographic and genetic confirmation of its presence here.

6. SCIENCE AND TECHNOLOGY

6.1. CALL FOR TWO TIME ZONES IN INDIA

Why in news?

Council of Scientific & Industrial Research's National Physical Laboratory (CSIR-NPL), which maintains Indian Standard Time (IST), has published a research article describing the necessity of two time zones.

Need for two time zones

- At present, the country observes a single time zone based on the longitude passing through 82°30'E.
- India extends from 68°7'E to 97°25'E, with the spread of 29° representing almost two hours from the geographic perspective. Early sunrise in the easternmost parts- (as early as 4AM in June) in the Northeast - causes the loss of many daylight hours by the time offices or educational institutions open, and that early sunset (4PM in winters), for its part, leads to higher consumption of electricity.
- The researchers estimated energy savings at 20 million kWh if we follow two time zones. This will have ecological and environmental benefits too.
- More use of sunlight would lead to more agricultural production.
- It will have an impact on circadian rhythm of the body and thus would have health benefits due to better leisure time and sleep. This, in turn, would enhance the productivity of people.

Proposal for new time zone

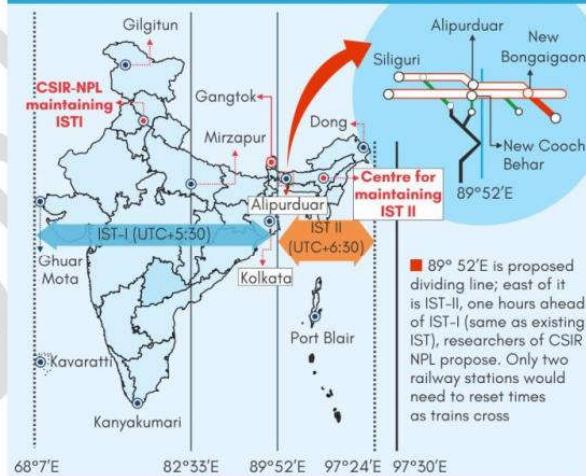
- The research paper proposes to call the two time zones IST-I (UTC + 5.30 h) and IST-II (UTC + 6.30 h).
- The proposed line of demarcation is at 89°52'E, the narrow border between Assam and West Bengal. States west of the line would continue to follow IST (to be called IST-I). States east of the line — Assam, Meghalaya, Nagaland, Arunanchal Pradesh, Manipur, Mizoram, Tripura, Andaman & Nicobar Islands —would follow IST-II.
- Location of the line is explained as: "As the railway signals have not yet been fully automated in the country, the border between the two time zones should have a very narrow spatial-width with minimum number of train stations so that the train timings while crossing the border can be managed manually without any untoward incidents."

Problems with multiple Time zones

- Having more than one time zone will create confusion and different timings would have to be framed for airlines, railways and communications services. For example; our railway schedules, signaling and track utilization will be a nightmare to manage. It might lead to accidents at the zone of crossing.
- There is also a strong political implication that comes with having multiple time zones. Awarding the north-east a separate time zone, given the region's long history of self-determination movements, would indicate an unstated support towards their spatial independence.
- Different time zones can be potentially problematic in India. Government offices in those states will close at different times and would be accessible only 75% of the time which can cause a potential loss of productivity.
- The lack of time coordination w.r.t essential services such as banking etc. might further alienate the NE region from the rest of the India.

- Since independence in 1947, the IST has been the official time for the whole country.
- India's time zones were first established in 1884.** Pre-independence India had two time zones. In the East, Calcutta Time was 5:30:21 hours ahead of GMT, while Bombay Time in the West was 4:51:00 hours ahead of GMT.
- Calcutta Time was abandoned in 1948 and Bombay Time in 1955.
- Assam already has a **Bagaan (tea garden) Time**, set an hour ahead of Indian Standard Time (IST)

DIVISION AT 'CHICKEN NECK'



Legal/Govt Position on Time Zones

- In 2002, based on a suggestion by then governor of Tripura, the Department of Science and Technology (DST) formed a high-level committee to explore the feasibility of two time zones. The committee rejected the idea of separate time zones.
- In 2006, the Planning Commission recommended the introduction of two time zones in the country, saying it would save "a lot of energy".
- The Gauhati High Court, last year dismissed a PIL seeking a direction to the Centre to have a separate time zone for the Northeast.

Countries with most number of time zones

- France: 12
- United States of America: 11
- Russia: 11
- United Kingdom: 9

Alternative to Multiple Time Zones

Given the energy saving benefits, a 2012 research paper commissioned by the Union Ministry of Power recommends to **advance IST by half-an-hour**. Also the National Institute of Advanced Studies (NIAS) in Bangalore recommended advancing IST by half-an-hour so that it is six hours ahead of GMT.

- All states will **save electricity** with amounts of savings varying in different states from 0.2% to 0.7% of daily consumption. As a percentage of peaking energy consumption, however, the savings are very significant, about 17-18%.
- This also keeps us away from the **complicated process of Daylight Saving's Time (DST)** followed in western countries.
- As per NIAS research, advancing the IST by half an hour will-
 - **Save energy 2.7 billion units every year.** The energy demand in the evenings due to domestic lighting will be reduced by about 16 per cent.
 - Result in estimated **saving of about Rs 1,500 crore per annum** for the nation.
 - **Increase the productivity** of the general population. India is primarily an agrarian economy and utilising sunlight is essential for maximum productivity.

It will optimally accommodate benefits of a separate time zones without creating a chaos.

6.2. POLIO VIRUS

Why in news?

Recently, the Union Health Ministry has ordered an inquiry into the type-2 polio virus contamination detected in the vials used for immunisation in Uttar Pradesh, Maharashtra and Telangana,

■ What is polio ■

 **Poliomyelitis (polio)** is a highly infectious viral disease, mainly affecting children

 According to WHO, the virus is transmitted from person-to-person, mainly through the **faecal-oral route**

 There is no cure for polio, it can only be prevented by **immunization**.



Strains

 There are three types of polio virus strains- **P1, P2 and P3**

 In September 2015, WPV type 2 was officially declared **eradicated**.

 India attained a **polio free** status in 2014 after successfully eliminating the wild P1 and P3 strains

Implication of the contamination

 In India the type-2 containing poliovirus vaccine (ToPV) was phased out in April 2016. Children born after April 2016 in India have no immunity to type-2 polio virus.

 India runs one of the world's largest immunization programmes. The entry of a dangerous vaccine into the immunization basket can jeopardize thousands of lives.

■ Type of Polio vaccine ■

 **Inactivated polio vaccine (IPV):** is produced from wild-type poliovirus strains that have been inactivated (killed) with formalin. As an injectable vaccine, it can be administered alone or in combination with other vaccines.

 IPV provides serum immunity to all three types of poliovirus, resulting in protection against paralytic poliomyelitis.

 **Oral polio vaccine (OPV):** contains an attenuated (weakened) vaccine-virus, activating an immune response in the body. When a child is immunized with OPV, the weakened vaccine-virus replicates in the intestine for a limited period, thereby developing immunity by building up antibodies. The vaccine is very safe and interrupts person-to-person spread of polio. However, on rare occasions, in under-immunised populations, the live weakened virus originally contained in OPV can mutate into circulating vaccine-derived poliovirus (cVDPV).

6.3. ZIKA VIRUS

Why in News?

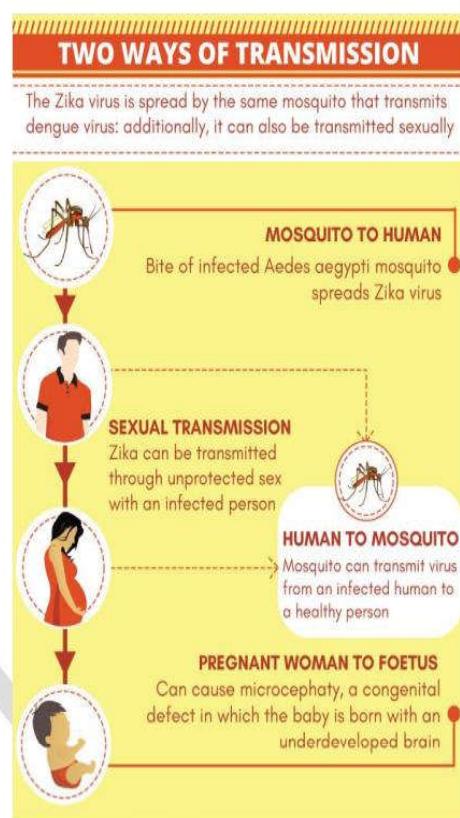
Few cases of Zika virus disease have been reported in Bihar.

About Zika

- First identified in Uganda in 1947 in monkeys, Zika was detected in humans five years later. Sporadic cases have been reported throughout the world since the 1960s, but the first outbreak happened only in 2007 in the Island of Yap in the Pacific.
- In 2015, a major outbreak in Brazil led to the revelation that Zika can be associated with **microcephaly**, a condition in which **babies are born with small and underdeveloped brains**. Generally, the virus is not considered dangerous to anyone other than pregnant women.
- Some countries that have had a Zika outbreak, including Brazil, reported a steep increase in **Guillain-Barré syndrome** — a **neurological disorder** that could lead to paralysis and death, according to WHO.
- India is vulnerable to Zika mainly due to the factors such as
 - Poor health facilities.
 - Lack of effective vaccination against Zika virus.
 - Lack of awareness.
 - Lack of after care in case of microcephaly occurrence.
- In India, the **first outbreak** was reported in Ahmedabad in January 2017 and second outbreak in July, 2017 from Krishnagiri District in Tamilnadu. Both these outbreaks were successfully contained through intensive surveillance and vector management.

India's response to Zika Virus Disease outbreak

- National Guidelines and Action Plan on Zika virus disease have been prepared and shared with the States to prevent outbreak of Zika virus disease and containment of spread in case of any outbreak.
- The Joint Monitoring Group, a Technical group under Directorate General of Health Service, tasked to monitor emerging and re-emerging diseases is regularly reviewing the situation on Zika virus disease. A 24x7 control room is functioning from Directorate General of Health Services. The situation is being monitored closely.
- All the International Airports / Ports have displayed signage providing information for travellers on Zika virus disease and to report if they are returning from any of the affected countries and suffering from febrile illness.
- Integrated Disease Surveillance Programme (IDSP) is tracking for clustering of acute febrile illness in the community. It has also sensitized its State and District Rapid Response Teams.
- The Rashtriya Bal Swasthya Karyakram (RBSK) is monitoring microcephaly from 55 sentinel sites.



6.4. WHO TB REPORT AND ROADMAP

Why in news?

- Recently, World Health Organisation (WHO) released World TB Report 2018, with collaboration of UN's first high-level meeting (HLM) on TB.
- Additionally, WHO released a Roadmap toward Ending TB in Children and Adolescent.

Findings of the World TB report 2018

- TB is the 10th leading cause of death worldwide, and since 2011. It has been the leading cause of death from a single infectious agent, ranking above HIV/AIDS.
- Overall, TB deaths have decreased over the past year. However, underreporting and under-diagnosis of TB cases remains a major challenge.

Concept Notes from report

- Triple-Billion Goals:** It is associated with WHO General Programme of Work 2019-2023 linked to SDGs health goals. This stressed the need of;
 - 1 billion more people are benefiting from Universal Health Coverage.
 - 1 billion more people are better protected from health emergencies,
 - 1 billion more people are enjoying better health and well-being.
- Catastrophic total costs due to TB:** It is TB-specific indicator incorporates not only direct medical payments for diagnosis and treatment, but also direct non-medical payments (e.g. for transportation and lodging) and indirect costs (e.g. lost income).

Related Information

Facts about TB

- TB is communicable infectious disease caused by the bacillus **Mycobacterium Tuberculosis**.
- It typically affects the lungs (pulmonary TB) but can also affect other organs (extrapulmonary TB).
- Drug Resistant TB:**
 - Multidrug Resistance TB (MDR):** It is TB that does not respond to at least isoniazid and rifampicin (2 of the most powerful first line drugs).
 - Extensively drug-resistant tuberculosis (XDR-TB):** It is resistant to at least four of the core anti-TB drugs. It involves multidrug-resistance (MDR-TB), in addition to resistance to any of the fluoroquinolones (such as levofloxacin or moxifloxacin) and to at least one of the three injectable second-line drugs (amikacin, capreomycin or kanamycin).
 - Totally drug-resistant tuberculosis (TDR-TB):** TB which is resistant to all the first- and second-line TB drugs.

Global Efforts for TB

- Moscow Declaration to End TB:** It is the outcome of first global ministerial conference on ending TB, in 2017.
- WHO- End TB Strategy**
 - Vision:** A world free of TB with zero deaths, disease and suffering due to TB.
 - It has three high-level, overarching indicators and related targets:
 - ✓ 95% reduction by 2035 in number of TB deaths compared with 2015.
 - ✓ 90% reduction by 2035 in TB incidence rate compared with 2015.
 - ✓ Zero the level of catastrophic costs for TB-affected families by 2035.

End the TUBERCULOSIS EPIDEMIC by 2030



Observations in World TB Report 2018 for India

- India accounted for 27% of the total new infections of TB in 2017, which is the highest among the top 30 high TB burden countries in the world.
- India also led in cases of **Multi-Drug Resistant TB (MDR-TB)**. Nearly a quarter of the world's MDR-TB cases are in India (24 per cent).

Roadmap toward ending TB in Children and Adolescent

It is systematic pathway which will guide the stakeholders to contains the prevalence of Child and Adolescent.

Observations in Roadmap

- Young children are at increased risk of developing severe forms of TB disease (e.g. disseminated TB, TB meningitis) with increased risk of death (especially children <2 years).
- Adolescent (10-19 years) TB patients faces unique challenges due to peer-pressure and fear of stigma, increasing prevalence of co-morbidities such as HIV, and risk behaviours such as alcohol, substance and tobacco use.
- Many of the policies and tools needed to break down the continuous cycle of transmission of disease and policy action need to be prioritised, strengthened and fully implemented to move us closer to ending TB.

6.5. BISPHENOL A (BPA)

Why in News?

Recently, Rice University researchers enhanced micron-sized titanium dioxide particles to trap and destroy bisphenol A (BPA).

More on news

- Scientists have created **tiny spheres of Titanium dioxide** that can catch and destroy BPA.
- The spheres provide plenty of surface area to anchor cyclodextrin — a benign sugar-based molecule which has a two-faced structure, with a **hydrophobic (water-avoiding) cavity** and a **hydrophilic (water-attracting) outer surface**.
- BPA being hydrophobic is attracted to the cavity where it is degraded into harmless chemicals.

About BPA

- Bisphenol A (BPA) is a chemical produced in large quantities for use primarily in the **production of polycarbonate plastics and epoxy resins**.
- Polycarbonate plastics have many applications including use in some food and drink packaging, e.g., water and infant bottles, compact discs, impact-resistant safety equipment, and medical devices.
- Epoxy resins are used as lacquers to coat metal products such as food cans, bottle tops, and water supply pipes. Some dental sealants and composites may also contribute to BPA exposure.
- Bisphenol A **can leach into food** from the protective internal epoxy resin coatings of canned foods and from consumer.
- The degree to which BPA leaches from polycarbonate bottles into liquid may depend more on the temperature of the liquid or bottle, than the age of the container.
- **BPA is an endocrine system disruptor** and it can interfere with the production, and function of natural hormones. It also contributes to high blood pressure.
- **BPA can also be found in breast milk.** Its Prolonged exposure is suspected of affecting the health of children.

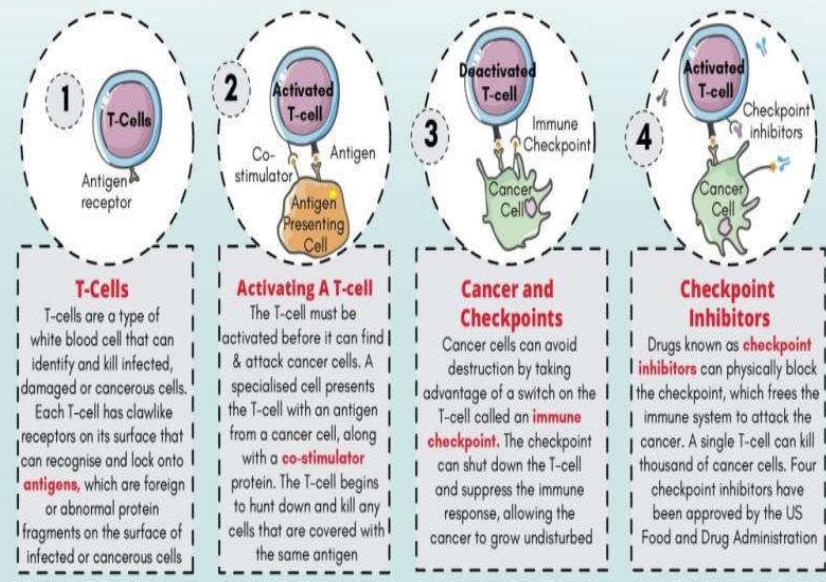
6.6. NOBLE PRIZES 2018

6.6.1. NOBEL PRIZE IN PHYSIOLOGY OR MEDICINE

- It has been jointly awarded to James P. Allison and Tasuku Honjo for their discovery of 'immune checkpoint therapy,' a cancer treatment.
- Working: By stimulating the inherent ability of our immune system to attack tumor cells by releasing the brakes on immune cells.
- James P. Allison studied a known protein that functions as a brake on the immune system. He realized the potential of releasing the brake and thereby unleashing our immune cells to attack tumors. He then developed this concept into a brand new approach for treating patients.
- Tasuku Honjo discovered a protein on immune cells and, after careful exploration of its function, eventually revealed that it also operates as a brake, but with a different mechanism of action. Therapies based on his discovery proved to be strikingly effective in the fight against cancer.

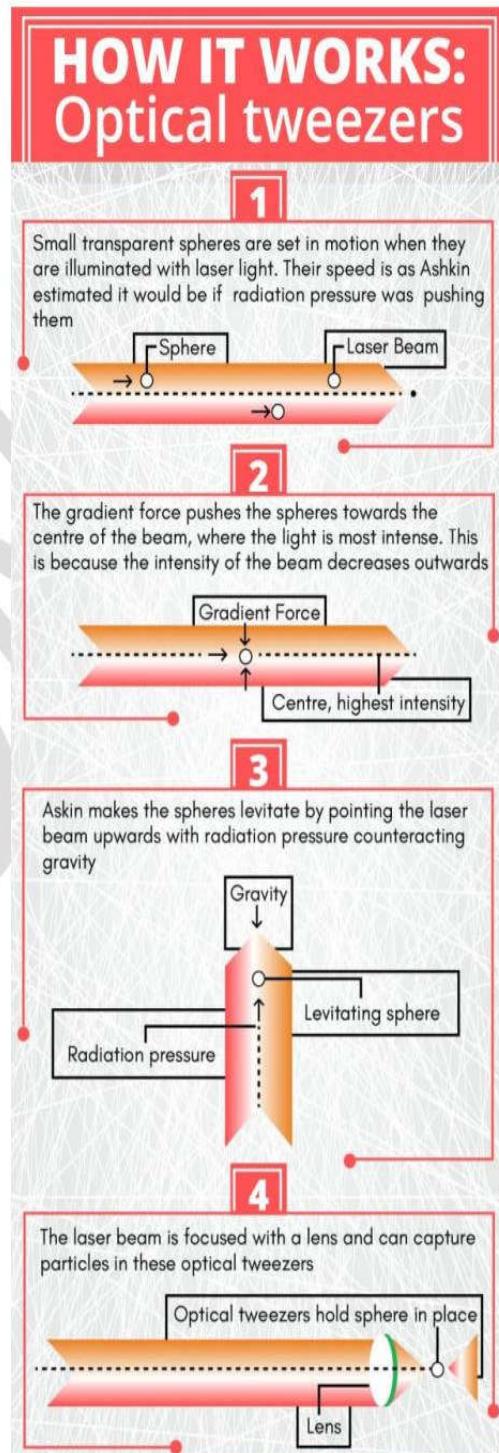
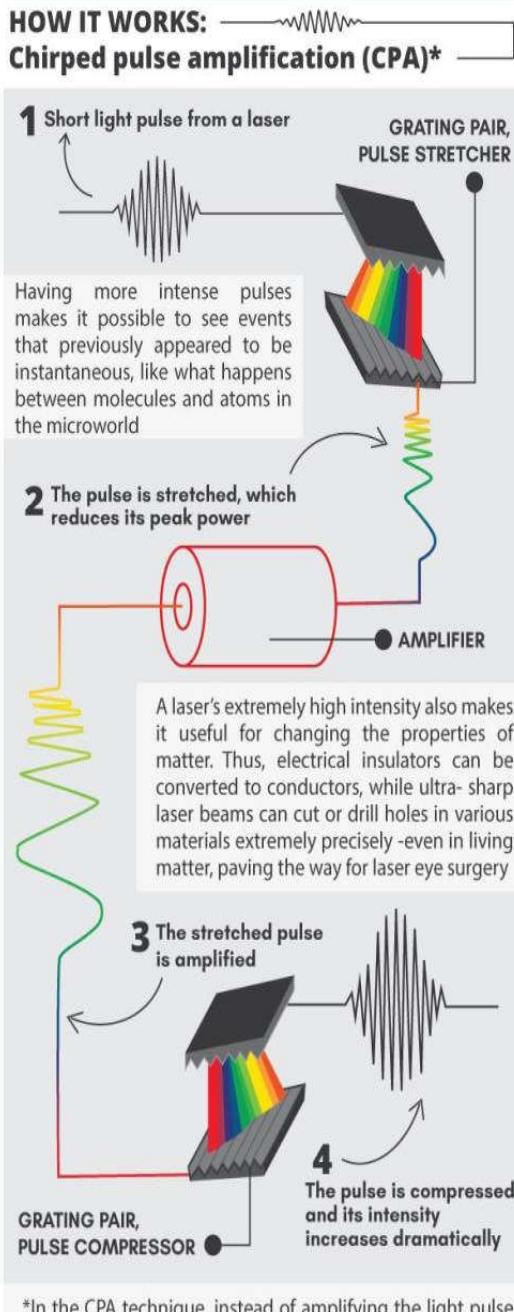
HOW IMMUNOTHERAPY WORKS

Cancer immunotherapy is the method that helps cells of the immune system identify and attack cancer cells



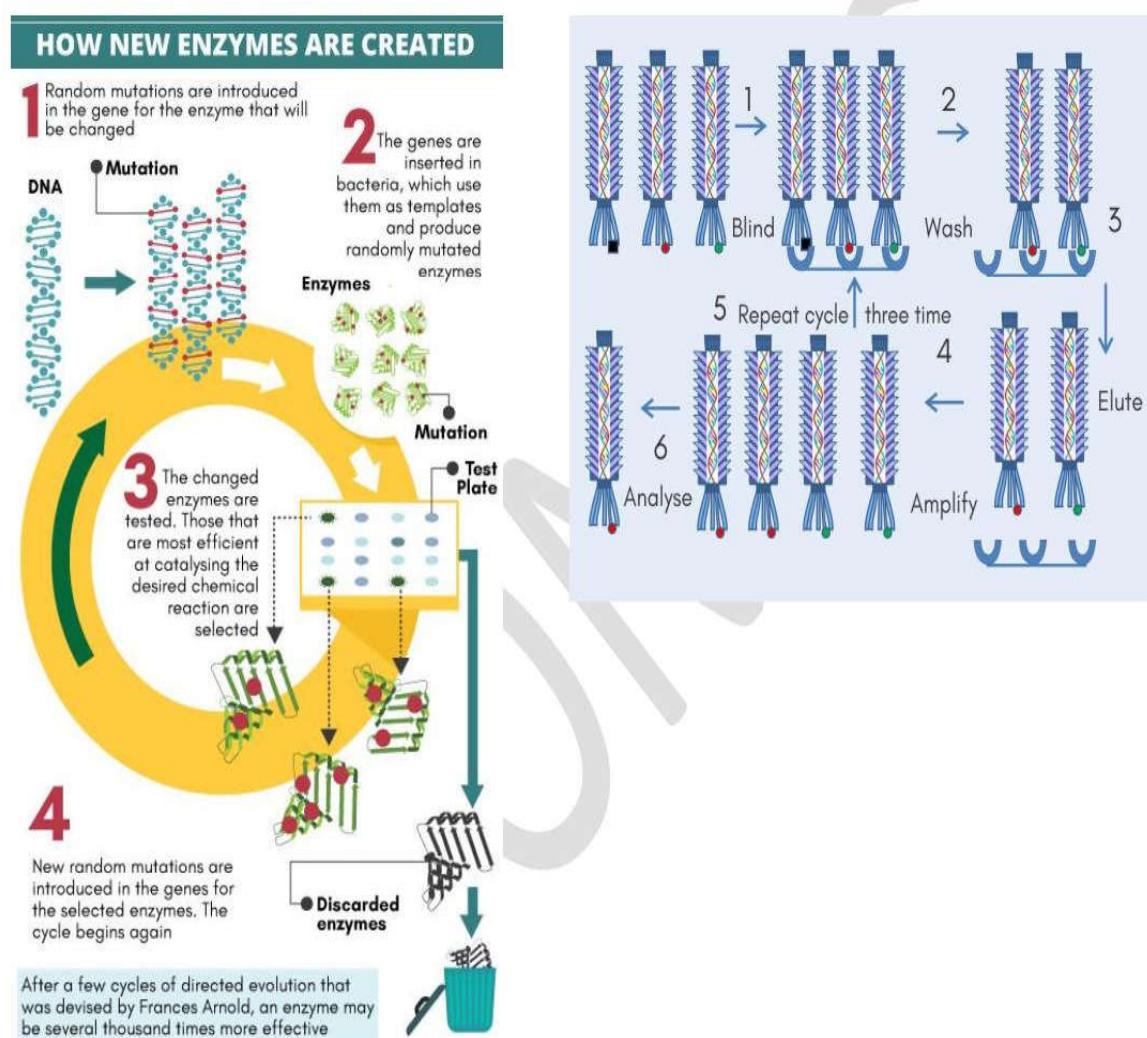
6.6.2. NOBEL PRIZE IN PHYSICS

- Nobel Prize in Physics 2018 was awarded for groundbreaking inventions in the field of laser physics with one half to Arthur Ashkin for the optical tweezers and their application to biological systems, the other half jointly to Gérard Mourou and Donna Strickland for their method of generating high-intensity, ultra-short optical pulses. Donna Strickland is third women to win Physics Nobel.
- Application:**
 - Optical Tweezers are widely used to investigate the machinery of life.
 - Chirped Pulse Amplification (CPA) for subsequent high-intensity lasers. Its uses include the millions of corrective eye surgeries that are conducted every year using the sharpest of laser beams.



6.6.3. NOBEL PRIZE IN CHEMISTRY

- The Nobel Prize in Chemistry 2018 was divided, one half awarded to **Frances H. Arnold** for the directed evolution of enzymes, the other half jointly to **George P. Smith** and **Sir Gregory P. Winter** for the Phage Display of peptides and antibodies. Ms. Arnold, only the fifth woman to win a chemistry Nobel.
- Application:**
 - First directed evolution of enzymes, which are proteins that catalyse chemical reactions, has been used in manufacturing of chemical substances, such as pharmaceuticals, and the production of renewable fuels for a greener transport sector.
 - Phage Display, where a bacteriophage – a virus that infects bacteria – can be used to evolve new proteins. It has produced anti-bodies that can neutralise toxins, counteract autoimmune diseases and cure metastatic cancer. Adalimumab, a first protein evolved through phage display, is used for rheumatoid arthritis, psoriasis and inflammatory bowel diseases.
- Phage display allows scientists to study protein interactions on a large-scale and select proteins with the highest affinity for specific targets. It provides a means to identify target-binding proteins from a library of millions of different proteins without the need to screen each molecule individually.



6.7. SPACE MISSIONS

6.7.1. NASA MISSIONS

Parker Solar Probe

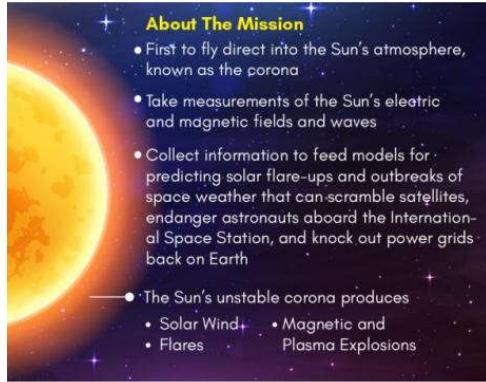
The Parker Solar Probe has completed a flyby of Venus, done to slowdown the spacecraft enough to avoid gravitational pull of the Sun, during its first gravity assist from the planet.

New Horizons probe

- It will flyby the Kuiper Belt object nicknamed Ultima Thule on 1st January, 2019 and will set the record for the most distant object ever visited by a spacecraft.
- It is the first mission to the Pluto System and the Kuiper belt.
- The farthest ever trajectory correction maneuvers (TCM) or course correction has been performed on this spacecraft.

Other Missions in news

- **Hubble Telescope** – Recently, it put itself into “safe mode” after one of its gyroscopes, which keeps it aimed at objects of scientific interest, died. It is the first major optical telescope to be placed in space. Hubble has an unobstructed view of the universe and scientists have used it to observe the most distant stars and galaxies as well as the planets in our solar system.
- **NASA's Chandra X-ray Observatory** also entered protective “safe mode” in October due to a malfunction of some sort. It is one of NASA's original “Great Observatories” projects along with Hubble, the Compton Gamma-Ray Observatory and the Spitzer Space Telescope.
- The planet-hunting **Kepler space telescope**, which has found about 70 percent of all known alien worlds to date, is almost out of fuel.
- **NASA's Dawn spacecraft**, which has been orbiting the dwarf planet Ceres (largest object in asteroid belt) since March 2015, is also nearly out of fuel.



Other related terms in news

MOONMOON

- They are potential moons of the moon i.e. a moon that orbits around another moon.
- Duncan Forgan has given the concept and the name for such celestial bodies.
- There haven't been any examples of moonmoons found in the solar system by now, but Saturn's moon Titan or Jupiter's moon Callisto are so big that there are possibilities of moonmoon for them.

6.7.2. EUROPEAN MISSIONS

BepiColombo Mission

- It is Europe's first mission to Mercury which will set off in 2018 and reach there in 2025.
- It is a joint mission between ESA and the Japan Aerospace Exploration Agency (JAXA), executed under ESA leadership.
- The mission comprises two space crafts: the Mercury Planetary Orbiter (MPO) and the Mercury Magnetospheric Orbiter (MMO).
- The mission will help in finding out the possibility of water in Mercury. The surface temperature of Mercury varies from 450 degree Celsius to -180 degree Celsius (areas permanently in shade).
- Mercury is the smallest and least explored terrestrial planet in our Solar System. Till now only NASA's Mariner 10 and US Space Agency's Messenger has flown past the planet.

Hyperion

- It is the largest ever galaxy proto-supercluster (A million Billion times that of Sun) sighted till date, with the help of Very Large Telescope of European Southern Observatory.
- This is the first time that such a large structure has been identified at such a high redshift, just over two billion years after the Big Bang i.e. when universe was relatively young.
- In general, such superclusters are observed at lower redshifts i.e. when universe has had much more time to evolve.

6.8. SCHEMES RELATED TO RESEARCH

Why in News?

Recently, Government launched two schemes to promote higher education research in India.

IMPRESS — Impactful Policy Research in Social Sciences

- **Aim:** To identify and fund research proposals in social sciences with maximum impact on the governance and society.
- **Eligibility:** To provide opportunity for social science researchers in any institution in the country, including all Universities (Central and State), private institutions and ICSSR funded/recognised research institutes.
- **Implementing Agency:** Indian Council of Social Science Research (ICSSR).

Identified domains under IMPRESS are:

- State and Democracy
- Urban Transformation
- Media, Culture and Society
- Employment Skills and Rural Transformation
- Governance, Innovation and Public Policy
- Growth, Macro Trade and Economic Policy
- Agriculture and Rural Development
- Health and Environment
- Science and Education
- Social Media and Technology
- Politics, Law and Economics

SPARC — Scheme for Promotion of Academic and Research Collaboration

- **Aim:** To boost joint research with global universities from 28 countries and get international expertise to solve major national problems, train Indian students in the best laboratories, deepen academic engagement and improve the international ranking of Indian Institutes.
- **Eligibility:** All Indian institutions ranked in top 100 of National Institutional Ranking Framework will be eligible for this scheme that targets PhD and postdoctoral researchers. Foreign institutions in top 100 to top 200 of global academic rankings from the 28 target countries will be eligible.
- A set of **Nodal Institutions (NI)**, from India, for each participating foreign country has been identified to help, handhold and coordinate with willing Participating Indian (PI) Institutions to forge alliance with the Institutions of concerned participating foreign country, for academic and research collaboration.
- **Implementing Agency:** IIT Kharagpur will be the National Coordinating (NC) Institution.

Thrust Areas under SPARC Scheme

- **Fundamental Research:** Those which attempt to provide new knowledge and understanding or address open unsolved problems of international importance.
- **Emergent Areas of Impact:** Those which look at new and emerging areas like Artificial & Machine Learning, Cognitive Science, Human Signal Processing, Digital Humanities, etc, that can potentially bring about a major impact cutting across disciplines and domains.
- **Convergence:** Those which bring together multiple disciplines of basic, engineering, economic, social science and humanities to solve critical problems of today in a holistic integrated manner.
- **Other areas like Action Oriented Research, Innovation-Driven and other proposal of high potential.**

7. SOCIAL ISSUES

7.1. STATE OF INTERNAL MIGRANTS IN INDIA

Why in news?

The recent exodus of migrant workers from Gujarat especially workers from UP and Bihar, following a rape incident has brought into limelight the issue of internal migration in India.

Reasons of Migration

- **Structural transformation of the economy-** The economic reforms of 1992 brought about fundamental changes in the economy of India. There was thrust on the secondary sector in order to boost employment. According to Census 2011, the average growth rate of the economy was 7.7 per cent per annum mainly secondary and service sector led pulling people to migrate to the places witnessing this growth.
- **Underdevelopment of development-** Agricultural growth has been, on average, lower than that in non-agriculture, including industry. Demographic pressure has pushed to 0.2 hectares of cultivable land per head of rural population. It has also progressively pushed down the size structure of landholdings. Thus, agricultural surplus labor is pushed to cities in search of work.
- **Urbanization-** The process of urbanization accompanying growth has caused regional imbalance. As per the census, the level of urbanization in India has increased from 27.81% in 2001 to 31.16% in 2011. Cities promised better education, work, health facilities, and autonomy etc. attracting huge rural population.
- **Migration network and Migration Industry-** The already established friends and families provide finance, information and places to live thus promoting migration. Also, migration is facilitated by a wide range of individuals and agents like brokers; labor recruiters etc. who derive profit from migration.

Why migration matters?

- **Positive Impact on the economy-** The migrants are often engaged in the construction, textile, mines, domestic work, and hotel etc. performing semi-skilled and low skilled jobs giving impetus to these sectors. They form a big part of the informal economy which is 87% of Indian economy. E.g. Green Revolution owes its success to migrant labors.
- **Social Cohesion and urban diversity**
 - Migration provides opportunity to escape caste divisions and restrictive social norms and to work with dignity and freedom at the new place.
 - Left-behind women enjoy empowerment, with increased interaction in society, including their participation as workers and decision makers of households.
 - It promotes diverse culture in India through people to people interaction and reducing information gaps in society.
- **Brain Gain-** Migrants bring back a variety of skills, knowledge and information known as 'social remittances', including change in tastes, perceptions and attitudes. For example, awareness about workers' rights, non-acceptance of poor employment conditions, low wages, semi-feudal labor relationships and improved knowledge.
- **Domestic Remittance Industry-** Domestic remittance industry is huge and is expected to increase by 1.5 lakh crores. The remittances increase purchasing power parity of native people and people start investing in health and education also.

Key Trends

- Traditionally based on 2001 census the migration in India was noted to be low at around 33 million with the low rate of growth.
- But 2017 Economic survey takes a different view and shows that migration in India is accelerating and the migrant population is in the country is 139 million.
- It shows that between 2011 and 2016, close to nine million people migrated between states annually, up from about 3.3 million according to successive censuses.
- In the period 2001-11, the annual rate of growth of labor migrants nearly doubled relative to the previous decade, rising to 4.5 per cent per annum in 2001-11 from 2.4 per cent in 1991- 2001, accompanied by a surge in the economy.
- The migrants' share of the workforce rose substantially.
- The acceleration of migration was particularly pronounced for females.
- In the 1990s female migration was extremely limited, and migrants were shrinking as a share of the female workforce.
- But in the 2000s the picture turned around completely, female migration for work not only grew far more rapidly than the female workforce, but increased at nearly twice the rate of male migration.
- Relatively less developed states such as Bihar and Uttar Pradesh have high net outmigration.
- Relatively more developed states have in migration: Goa, Delhi, Maharashtra, Gujarat, Tamil Nadu, Kerala and Karnataka.

Challenges of Migration

- **Development Cost**
 - Unplanned development has serious consequences both for the in-migration destination and the migrant.
 - It creates pressure on resources like land, housing, transportation and jobs. Migrant's population can indulge in criminal activity disrupting the social fabric of the in-migration area. The recent backlash in Gujarat was about migrants taking away jobs of locals and committing crimes.
 - Migrants due to low bargaining power and skills have to face numerous constraints, including lack of political representation; inadequate housing and lack of formal residency rights; low-pays, insecure or hazardous work; limited access to state provided services such as health and education; and discrimination based on ethnicity, religion, class or gender.

- **Low priority in governance** - Regulations and administrative procedures exclude migrants from access to legal rights, public services and social protection programmes given to residents, because of which they are often treated as second class citizens.
- **Weak Law** - The Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act (1979) is weak.
 - It remains silent on provision for crèches, education centres for children or mobile medical units for the laborers and it has no guidelines for inter-state cooperation.
 - The law covers only regulation of employment and conditions of service of migrants and does not address access to social protection of migrants, their right to the city and the special vulnerabilities of children and women migrants.
 - The important provisions of the Act such as minimum wages, displacement allowance, medical facilities and protective clothing remain unenforced.
- **Lack of reliable data**- There exists a serious data gap on the extent, nature and magnitude of internal migration. Databases such as the Census fail to adequately capture real information about migration leading to problems in defining, designing and delivering services to migrants.

Way forward

- **Coherent Policy Framework and strategy-**
 - Mainstreaming migration in a comprehensive and focused manner in policy and national development plans e.g. smart city mission, AMRUT, housing for all, ayushman bharat etc.
 - Develop a universal national minimum social security package covering minimum wages and labor standards and incorporating portability of benefits in all government social protection schemes and public services through an interstate registration process.
 - In Kerala, the construction industry, for example, which has a huge percentage of migrant labor, has a welfare board with a ₹ 1,000 crore corpus, and the government has announced a survey of migrant workers' living conditions, and assistance in procuring health insurance and legal aid.
 - Amend the 1979 the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act to make it more inclusive of migrants.
- **Evidence based policy making**- A comprehensive data needs to be collected scientifically through mapping, profiling etc. in order to understand the nature of migration in India wrt to gender, region, caste, seasonal cycle etc.
- **Capacity building and state coordination**
 - Create inter-district and inter-state coordination committees to jointly plan institutional arrangements between administrative jurisdictions of sending and receiving areas to ensure service delivery.
 - Build capacity of panchayats to maintain a database of migrant and establish vigilant committees at the local level.
 - Establish migrant labor cells in each state labor department with the support of the Labor Ministry.
 - Increase financial and human resources in migration-prone areas.
 - Promote public-private partnerships (PPP) for the promotion of safe internal migration.
 - Ensure access to formal banking facilities for migrants to enable safe and secure transfer of remittances.

7.2. WOMEN IN AGRICULTURE

Why in News?

October 15 is celebrated as **National Women's Farmer's Day** (Rashtriya Mahila Kisan Diwas) by recognising the multidimensional role of women at every stage in agriculture.

Feminization of Agriculture reflects the shift in the gender roles in the agriculture. Where earlier the image of agriculture or an agricultural farmer was associated deeply with men, in today's India, the image has been feminized due to increasing number of female workers in the agriculture sector.

Current trends in feminisation of Agriculture

- According to the Food and Agriculture Organization (FAO), women's contribution to Indian agriculture is about 32%, while in some states (such as Hills, Northeast, and Kerala) contribution of women to agriculture and rural economy is **more than men**.
- Economic Survey 2017-18** says that with growing rural to urban migration by men, there is '**feminisation**' of agriculture sector, with increasing number of women in multiple roles as **cultivators, entrepreneurs, and labourers**. According to **Census 2011**, out of total female main workers, **55% were agricultural labourers and 24% were cultivators**.
- A research by the Indian Council of Agricultural Research (ICAR) shows that the **participation of women is 75% in the production of major crops, 79% in horticulture and 51% in post-harvest work**.

National Women's Farmer's Day (Rashtriya Mahila Kisan Diwas)

- The United Nations observes October 15 as **International Rural Women's Day** to highlight the contribution of rural women to the world's economic development.
- Taking cue from this, the Government of India declared **October 15 as Rashtriya Mahila Kisan Diwas** in 2016.
- This was a welcome step, especially in the context of the agricultural collapse that has engulfed the country and has manifested itself through farm suicides and exclusion of women agricultural labourers from the narrative of agricultural reforms in India.

Impact of women in agriculture:

- FAO estimates that if women had the same access to productive resources as men, they could **increase yields on their farms by 20-30%**. This could raise total the agricultural output in developing countries by **up to 4%** which would mean a **dramatic reduction in hunger**.
- Research worldwide shows that women with **access to secure land, formal credit and access to market** have greater propensity in **making investments** in improving **harvest, increasing productivity, and improving household food security and nutrition**.
- Women are more likely than men to hold **low-wage, part-time, seasonal employment** and they tend to be paid less even when their qualifications are higher than men's, but new jobs in **high-value, export-oriented agro-industries** offer much better opportunities for women.
- Women can propel the country towards **second Green Revolution** and they can change the landscape of the development if they get opportunities and facilities.

Reasons behind Feminization of Agriculture

- Male Migration-** There has been a need for men to find better avenues for income for the sustenance of their family. Urban centres have been seen as providing lucrative job opportunities for them. Men from rural areas migrate to cities seeking a means for regular income leaving behind the agricultural chores to women.
- Low level of Skills-** The women in turn face various hardships while operating agricultural chores such as low level of agricultural skills, lack knowledge to improve productivity thereby entering into a vicious cycle of poverty.
- Lack of Property Rights-** Given the social and religious set up in India, women do not generally enjoy equal property rights as their male counter parts. The property related rules and rights are governed by the religious laws which are inherently unequal.
- Lack of bargaining power to women-** Due to lack of property rights, women are generally not given the land rights in their name. Because of this, women lack bargaining power in the family as against the property holding male member. Also, due to low level of skills, they work much longer hours than men and are paid lesser than their counterpart.

- **Farmer Suicides:** The increasing numbers of suicides among male farmers forces women to take up farming as they cannot manage their families with the compensation that they may get.

Challenges faced by women in Agriculture:

- **Issue of land ownership:** The biggest challenge is the powerlessness of women in terms of claiming ownership of the land they have been cultivating. As per Census 2011, only 12.8% of the operational holdings were owned by women, which reflect the gender disparity in ownership of landholdings in agriculture.
- **Lack of Institutional Credit:** Lack of ownership of land does not allow women farmers to approach banks for institutional loans as banks usually consider land as collateral.
- **Non-recognition:** According to Oxfam India, women are responsible for about 60-80% of food and 90% of dairy production, respectively. But the work by women farmers, in crop cultivation, livestock management or at home, often goes unnoticed.
- **Contract farming:** Female farmers are largely excluded from modern contract-farming arrangements because they lack secure control over land, family labour and other resources required to guarantee delivery of a reliable flow of produce.
- **Innovation in Agriculture:** When a new technology is introduced to automate specific manual labour, women may lose their jobs because they are often responsible for the manual duties.
- **Lack of Training:** Attempts by the government to impart them training in poultry, apiculture and rural handicrafts is trivial given their large numbers.
- **Gender discrimination:** The 17-country study by Corteva Agriscience revealed that almost 78% women farmers in India face gender discrimination.
- **Poor Representation:** As of now, women farmers have hardly any representation in society and are nowhere discernible in farmers' organisations or in occasional protests.
- **Access to resource and inputs:** When compared to men, women generally have less access to resources and modern inputs (seeds, fertilizers, pesticides) to make farming more productive.

Way Forward

- **Provision of credit without collateral** under the micro-finance initiative of NABARD should be encouraged. Better access to credit, technology, and provision of entrepreneurship abilities will further boost women's confidence and help them gain recognition as farmers.
- A declining size of land holdings may act as a deterrent due to lower net returns earned and technology adoption. The possibility of **collective farming** can be encouraged to make women self-reliant.
- **Training and skills** imparted to women as has been done by some **self-help groups** and **cooperative-based dairy activities** (Saras in Rajasthan and Amul in Gujarat). These can be explored further through farmer producer organisations.
- Government flagship schemes such as the **National Food Security Mission**, **Sub-mission on Seed and Planting Material** and the **Rashtriya Krishi Vikas Yojana** must include **women-centric strategies** and dedicated expenditure.
- Most of the farm machineries are difficult for women to operate, so it is important to have **gender-friendly tools and machinery** for various farm operations. **Farm machinery banks** and **custom hiring centres** can be roped in to provide subsidised rental services to women farmers.
- According to Food and Agriculture Organisation, **equalising access to productive resources** for female and male farmers could increase agricultural output in developing countries by as much as 2.5% to 4%. **Krishi Vigyan Kendras** in every district can be assigned an additional task to **educate and train women farmers** about innovative technology along with extension services.
- An '**inclusive transformative agricultural policy**' should aim at **gender-specific intervention** to raise productivity of small farm holdings, integrate women as active agents in rural transformation, and engage men and women in extension services with gender expertise.

Government Interventions to improve women's role in Agriculture

- The government is earmarking at least 30% of the budget allocation for women beneficiaries in all ongoing schemes-programmes and development activities.
- Government is also giving preference to women under various policies such as **organic farming**, **self-employment scheme**, **Pradhan Mantri Kaushal Vikas Yojana** etc.
- Recognizing the critical role of women in agriculture, the Ministry of Agriculture and Farmers Welfare has declared **15th October** of every year as **Women Farmer's Day**.
- **Cooperative education programs** of women are organized through State Cooperative Societies to ensure women participation in various activities in the field of cooperatives.
- Under Agriculture policies, provisions of issuing **Kisan Credit Card** to women and creating livelihood opportunities through livestock practices, agricultural processing are mentioned.
- Focussing on **women self-help groups (SHG)** to connect them to **micro-credit** through capacity building activities and to provide information and ensuring their representation in different decision-making bodies.
- Special importance is being given to the role of women in achieving the goal of **doubling farmers' income by 2022**.

7.3. TEENAGE GIRLS (TAG) REPORT

Why in news?

Recently, an NGO named Nandi Foundation released a report on teenage girls, which is first such report in India.

About the TAG report

- The report includes the teenage girls from **13 to 19 years of age group**.
- It reveals what it really means to be a teenage girl in India.
- Subsequently report/survey findings have also been used to prepare an Index called the TAG Index

Key Takeaway from the report

- **On Education**
 - During teenage, the percentage of girls studying decreases, nearly 92.3 per cent are studying, at the age of 13 years. Whereas only 65.5 per cent are studying at age 19.
 - Presently, 80 per cent teenage girls are currently studying.
 - In term of current school enrolment, rural India is almost on par with urban India when it comes to girls being in school. The dropout rate in rural areas is also low now.
- **On Health & Hygiene**
 - Overall, 39.8 per cent reported open defecation because; Most of the toilets lack a water connection and the current practice of attached toilet and bathroom has not been a traditional practice thus girls feel shy to use the toilet.
 - Every second teenage girl in India is using unhygienic methods of mensural protection.
 - Nearly, 51.8 per cent teenage girls in India are having anaemia.
- **On Aspiration**
 - Survey showed that nearly, 96% of teenage girls are unmarried with hardly any difference in rural (95.5%) and urban (96.6%).
 - Around 70% girls wish to pursue higher studies and most adolescent girls aspire to work after their studies and marry only when they are able to earn a living.
 - Approx. 73.3% girls want to get married after the age of 21 and wish to pursue higher studies with a specific career in mind.

Significance of empowerment of teenage girl

- **Economic Prospect:** various studies by United Nation agencies highlighted that empowering the girls creates a ripple effect in society in term of economic growth. For instance; 10 percent increase in girls going to school can increase the national income (GDP) by three percentage points.
- **Demographic Dividend:** In order to utilise this demographic dividend (which is going to last for 25 years) investment in health and education for teenage girls (which is huge proportion of workforce) is paramount.
- **Child Health:** The health of the teenage girl holds significance not only for her own life, but also for the health and well-being of the children she may have.

Ranking of States & Cities on TAG Index.

It is based on performance of each state based on the status of their teenage girls.

- Kerala and Mizoram are the top two States while top three cities are Mumbai, Kolkata and Bengaluru.
- **Uttar Pradesh is the worst performer in TAG Index.**

7.4. KASTURBA GANDHI BALIKA VIDYALAYA (KGBV)

Why in News?

A recent Supaul incident of sexual harassment reveals the problems with KGBV administration in country.

About the Scheme

- **Objective:** KGBV scheme under **Sarva Shiksha Abhiyan (SSA)** provides residential elementary educational facilities at upper primary level to girls belonging to Scheduled Castes, Scheduled Tribes, Other Backward Classes, minority communities and families below the poverty line in **Educationally Backward Blocks**.
- **Present Status:** There are 3703 KGBVs, out of which 3697 KGBVs are operational, enrolling 3.78 lakh girls.
- **Convergence with other Scheme:** Under the newly launched **Integrated Scheme of School Education-Samagra Shiksha**, provision has been made to upgrade the existing KGBVs at upper primary level to upto senior secondary level in convergence with the erstwhile **Girls Hostel Scheme**.

Challenges in Implementation

- **Poor Management:** There are wide variations in the management of KGBVs within and across the states as both government and NGOs are involved in the management of KGBVs.
- **Lack of Funding:** Recurring costs of KGBV component of the SSA programme that had not been revised since 2004.
- **Infrastructure Gaps:** Construction of school buildings along with proper toilets, library facilities and low female teachers ration where observed as a significant performance gaps.
- **Underutilization of funds:** due to the reasons such as low strength of girl children, untimely availability of funds and low teachers' strength.
- **Security problem in KGBV:** Girls feel that lack of boundary wall and lack of security guard is a matter of concern for their security.
- **Role of teacher:** The number of teachers per school is less than the requirement, also temporary nature of teaching impact the efficiency of schooling.

Way Forward

- **Better implementation and monitoring:** Independent management for KGBV at the national level for better implementation and monitoring of the scheme as variations have been reported in or within the states resulting in deviations from the scheme objectives.
- **Fortifying safety and security aspects:** For eg- provision of boundary walls, security personnel etc. are required in KGBVs.
- **Improving Amenities:** Better maintenance and repair of infrastructure facilities in hostels, school, library and computer facility.
- **Improving Teachers ratio:** Appointment of permanent teachers with training exposure and better salary to focus on teaching-learning activities.

7.5. SWACHH BHARAT ABHIYAN (URBAN)

Why in news

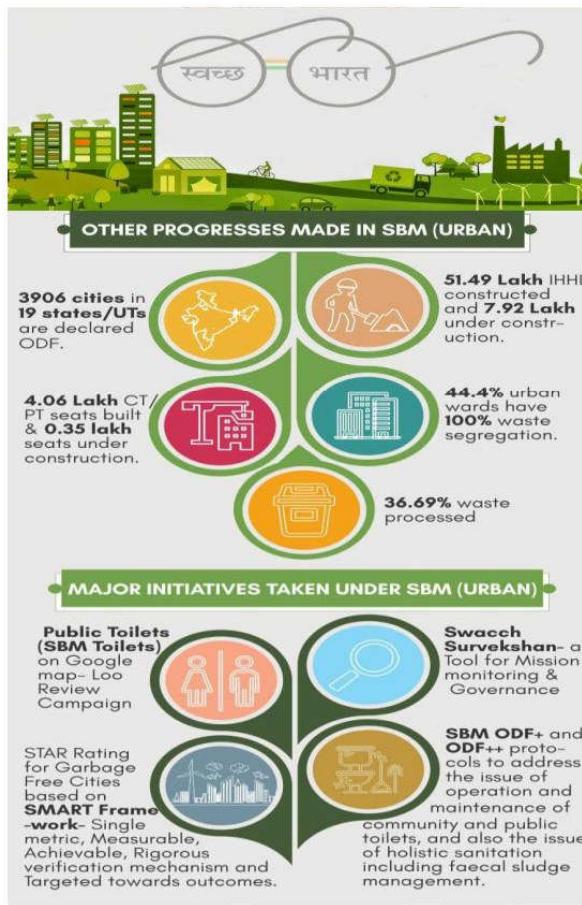
The Swachh Bharat Abhiyan (SBA) completed 4 years on 2 October 2018.

Status of SBA

Swachh Bharat Survey was conducted by NSSO during July - December, 2017 along with the other surveys of NSS 75th round (July 2017 - June 2018).

Main findings of this survey with respect to SBA-URBAN are as below:

	May - June 2015	July – Dec 2017
Households having sanitary toilet	89%	94%
Households having water for use in the toilet	88%	93%
Persons from households having sanitary toilet used any type of toilet (household/community/public toilet)		99%
Persons from households not having sanitary toilet used any type of toilet (household/community/public toilet)	46%	49%
Disposal of household garbage at a specific place/ common place/biogas plant or manure pit		90%



Swachh Bharat Abhiyan (Urban)

- It is overseen by the Ministry of Urban Development and is mandated to provide sanitation and household toilet facilities in all 4041 statutory towns with a combined population of 377 million.
- The Mission aims to cover 1.04 crore households, provide 2.5 lakh community toilet seats, 2.6 lakh public toilet seats and set up in all towns solid waste management facilities.
- The Urban mission seeks to eliminate open defecation; convert insanitary toilets to flush toilets; eradicate manual scavenging; and facilitate solid waste management.
- This mission lays special emphasis on bringing about a behavioral change relating to healthy sanitation practices by educating people about the environmental hazards emanating from the strewn garbage, the harmful effects of open defecation etc.

At the core of this mission lie six components:

- Individual household toilets(IHHL);
- Community toilets;
- Public toilets;
- Municipal Solid Waste Management;
- Information and Educating Communication (IEC) and Public Awareness;
- Capacity Building

Problems with respect to Sanitation in Cities

- Poor utilization of STPs:** According to Central Pollution Control Board (CPCB) data, of the 62 billion litres of wastewater (sewage) generated in our cities daily, only 23 billion litres gets treated. The rest, two-thirds of it, flows into rivers untreated.
 - As per CPCB 2015 Report, only 64 percent (522 of 816) sewage-treatment plants (STP) work.
 - Also, building sewers and sewage-treatment plants are not a part of SBM-Urban.
- Regional variation in waste treatment:** The sewage treatment capacity varies across states. While Maharashtra generates the highest amount of sewage among states, it treats 63 per cent of it. Kerala, West Bengal and Bihar treat less than 10 per cent of the sewage they generate. Overall, only 37 per cent of the municipal waste in India gets treated.
- Critically polluted rivers:** A recent CPCB report shows that about 175 of the 351 select river stretches in India have pollution levels higher than the clean norm.

Waste Profile in Urban India

- Organic/ Compostable- 40-60%
- Recyclable/ Resource Recoverable- 20-30%
- Non- Recyclable/ Combustible waste (RDF)- 10-20%
- Construction and Demolition/ Usable construction material- 5-15%

- **Poor Waste Collection:** In India an estimated 65 million tonnes (MT) of Municipal Solid Waste (MSW) is generated annually by around 400 million urban citizens. Along with the huge number, the collection process is fraught with other issues such as
 - **Lack of segregation:** As per latest SBM data, only 44 per cent of the total wards in the country are segregating their waste at source. Solid waste that is collected is mostly a mix of dry waste and wet organic waste. In such a situation, the wet waste reacts with the dry waste to create sludge and leachate, which spreads a foul smell across the city, pollutes the groundwater, and proves fatal for sanitation workers.
 - It is estimated that 165 MT of waste will be generated by 2030 and 450 MT by 2050 along with resultant public health and environmental challenges.
- **Pressure on land resource:** We are also losing 1250 hectares of additional precious land every year to accommodate dumping of unprocessed MSW.
- **Unconnected population:** No more than 56.4 percent of urban homes, where 377 million people live, are connected to sewer lines (36.7 percent of rural areas, where 833 million people live, have drainage), according to a 2017 national sample report.
- After four years of Swachh Bharat, the gaps are huge. If the crisis in rural areas is the failure to use toilets, in urban areas, it is the failure of sewage and waste treatment that is thwarting the campaign's objective.

Way Forward

- **Better financial management:** Of the Rs 7,365 crores allocated for SBM for Solid Waste Management, only 2126.24 crores (**28 per cent**) only have been dispersed so far. Its utilization must result in accountable and transparent outlays.
- **Raise awareness:** Swachh Bharat Mission (SBM) demonstrates the importance of vision and leadership. Public campaigns to raise awareness and mobilise the masses are a basic necessity.
- **Sewerage Master Plan:** Success requires long-term national commitment. There is a need to implement a Sewerage Master Plan to separate our sewerage and drainage networks as done by Singapore. This will prevent contamination of rainwater while ensuring recycling of sewage using STPs.
- **International cooperation:** India successfully hosted the inaugural **Mahatma Gandhi International Sanitation Convention-2018**, which has brought together leaders, practitioners, and experts from around the world to share their sanitation stories.
 - Singapore has collaborated with India's Town and Country Planning Organisation (TCPO) to train 100 officials in urban planning, and water and waste management.
- **Focus on STPs:** Building sewers and sewage-treatment plants should be made part of SBM-Urban. This will ensure connecting the rest of the population with sewerage network. The capacity of STPs should also be enhanced with upgradation of old STPs and building new STPs.
- **Adherence to rules and standards:**
 - Every municipality must follow the **Solid Waste management Rules-2016** in its solid waste disposal.
 - **Design of toilets** must adhere to Bureau of Indian Standards (BIS). **Masons should be trained** and skilled according to these standards.

In 2013, to raise awareness of the global sanitation challenge, the UN adopted the resolution "Sanitation for All", to commemorate November 19 as **World Toilet Day**.

7.6. GLOBAL HUNGER INDEX 2018

Why in news?

India has been ranked at 103 out of 119 countries in the GHI 2018, with hunger levels in the country categorised as "serious".

About GHI

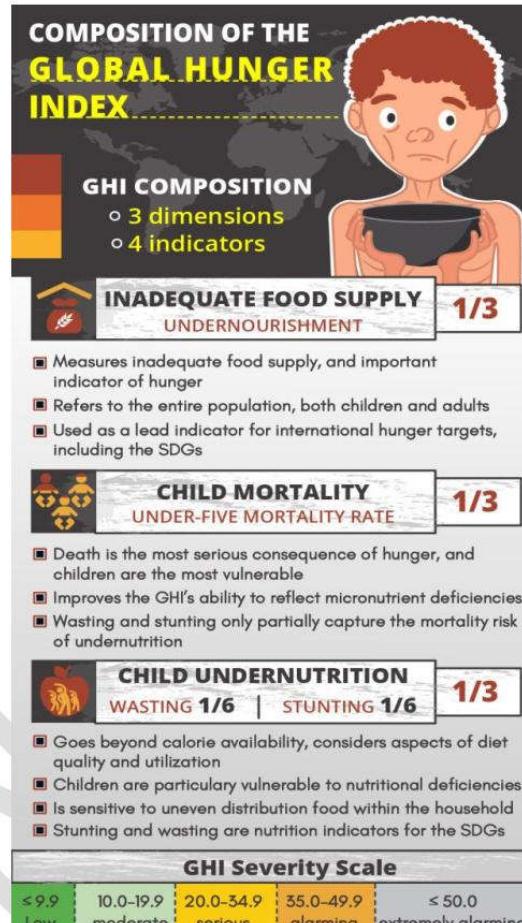
- It is a tool designed to comprehensively measure and track hunger at global, regional, and national levels.
- GHI is released annually by Welthungerhilfe and Concern Worldwide. (The International Food Policy Research Institute, IFPRI was also involved with the publication until this year.)

Findings related to India:

- India's ranking has dropped three places from 2017.
- India has shown improvement in three of the indicators over the comparable reference years.
 - The percentage of **undernourished people** in the population has dropped from 18.2% in 2000 to 14.8% in 2018.
 - **Child mortality rate** has halved from 9.2% to 4.3%, and
 - **Child stunting** has dropped from 54.2% to 38.4% over the same period.
- However, the prevalence of **child wasting** has worsened. It stood at 17.1% in 2000, and increased to 20% in 2005. In 2018, it stands at 21%. At least one in five Indian children under the age of five are wasted.

Other Global Findings

- Globally, the level of hunger falls into the "serious" category at a value of 20.9 on GHI Severity scale. Approximately 124 million people suffer from acute hunger, a steep increase from 80 million in 2016.
- Across South Asia: Child wasting is constituting a "critical public health emergency".
 - ✓ Low Maternal body mass index BMI and lack of access to improved water and sanitation are more closely associated with rates of child wasting than household wealth, suggesting that a reduction in poverty alone may not be sufficient to correct the problem.



Forced Migration and Hunger

This year's report also analyzes the interplay between hunger and forced migration. For displaced people, hunger may be both a cause and a consequence of forced migration. It gives four key areas in which support to these people needs to be improved:

- Recognizing and addressing hunger and displacement as political problems;
- Adopting more holistic approaches to protracted displacement settings involving development support;
- Providing support to food-insecure displaced people in their regions of origin;
- Recognizing that the resilience of displaced people is never entirely absent and should be the basis for providing support

Policy recommendations in Report for displaced people

- **Leave no one behind**
 - Resources should be focused on those regions of the world where most displaced people are located.
 - Governments must accelerate progress under the **UN Plan of Action for Advancing Prevention, Protection, and Solutions for Internally Displaced People 2018–2020**.
 - Special vulnerabilities and challenges of **women and girls** should be prioritised along with acceleration of development in **rural areas** which is where large number of displaced people originate.
- **Implementing Long-Term solutions**
 - **Strengthen the resilience** of displaced populations by providing access to education and training, employment, health care, agricultural land, and markets.
 - Implement durable solutions, such as local integration or return to regions of origin on a voluntary basis.
 - Design **policies and programs** that recognize the complex interplay between hunger and forced migration as well as the dynamics of displacement.
- **Show Solidarity, Share Responsibility**
 - Adopt and implement the **UN Global compact on refugees (GCR)** and the **Global Compact for Safe, Orderly and Regular Migration (GCM)**, and integrate their commitments into national policy plans.

- Uphold humanitarian principles and human rights when assisting and hosting refugees, Internally Displaced Persons, and their host communities.
- **Address the root causes of forced displacement** especially in the areas of poverty and hunger reduction; climate action; responsible consumption and production; and promotion of peace, justice, and strong institutions.
 - Governments, politicians, international organizations, civil society, and the media should work to proactively counter misconceptions and promote a more informed debate on these issues.

7.7. NON-COMMUNICABLE DISEASES

Why in News?

The 73rd session of the United Nations General Assembly (UNGA) adopted a declaration called "Time to Deliver: Accelerating our response to address NCDs for the health and well-being of present and future generations".

About NCDs

- According to WHO, Noncommunicable diseases (NCDs), also known as **chronic diseases are diseases of long duration** which are a result of a combination of genetic, physiological, environmental and behavioral factors.
- The four major non-communicable diseases are: **cardiovascular diseases, cancers, respiratory diseases and diabetes**
- Noncommunicable diseases (NCDs) kill 41 million people each year, equivalent to 71% of all deaths globally.
- While NCDs were not included in the Millennium Development Goals, they are now an important target in the Sustainable Development Goals, under which countries would have to "**reduce by 1/3rd, pre-mature mortality from non-communicable diseases through prevention and treatment, and promote mental health and wellbeing**" by 2030

Causes of NCDs

- Behavioural Factors:** Modifiable behaviours, such as tobacco use, physical inactivity, consumption of processed food with enriched salt and sugar content and the harmful use of alcohol, all increase the risk of NCDs.
- Metabolic factors:** These include raised blood pressure, obesity, high blood glucose levels, etc. These risks are often increased due to behavioural factors.
- Structural factors:** The risks have been aggravated by the increasing sedentary life styles, Urban settlements with lack of open spaces and recreational activities, stressed work culture, pollution etc.

Impact of NCDs

- Poverty:** The rapid rise in NCDs is predicted to impede poverty reduction initiatives in low-income countries, particularly by increasing household costs associated with health care.
- Loss of Workforce:** Productive demographic dividend can be impacted due to such diseases which may take a toll on the economy. This also increases the Dependency ratio of the country.
- Impact on children:** NCDs impact on children is a major concern, in particular the rising levels of obesity.

Way Forward

Some facts about NCDs in India

- NCDs are reason for more than 60% death in India.
- India's Ministry of Health and Family Welfare recently received the prestigious UN Inter-Agency Task Force Award for "outstanding contribution to the achievement of NCD (Non-Communicable Diseases) related SDG targets"
- NCDs are reason for more than 60% deaths in India.
- According to the World Economic Forum (WEF), India stands to lose \$ 4.58 trillion (Rs 311.94 trillion) due to non-communicable diseases between 2012 and 2030

Steps taken By India

- WHO has developed a comprehensive Global Monitoring Framework and Action Plan for prevention and Control of NCDs. India is the first country globally to adopt it to its National Context.
- National Health Policy advocates pre-screening and sets the target to reduce premature mortality via NCDs by 25% by 2025.
- The central government is implementing National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) for interventions up to District level under the National Health Mission.
- A flexi pool of funds for Non-Communicable Diseases (NCD) has been created.
- NCD IT solution under Ayushman Bharat** covers program-level data for screening, referral, diagnosis, treatment and follow-up activities of non-communicable diseases with an aim to connect health workers, doctors and decision-makers in a single, integrated platform.
- Niti Aayog has proposed models for PPP to increase the role of private hospitals in treating non-communicable diseases.

- **Healthy Lifestyle:** Promote behavioral changes such as reducing tobacco and alcohol consumption, promoting healthy diets, physical activities such as Yoga, sports, exercise, etc.
- **Increase Governmental health expenditure:** Actions related to reduction of blood pressure, control of diabetes and provision of competent primary care supplemented by cost-effective specialist clinical care for treatable NCDs will benefit all age groups.
- **Stringent Norms for processed and ready to eat food:**
 - The UN declaration has asked food manufacturers to reduce salt, free sugars and saturated and industrially-produced trans fats in their products.
 - It also said that manufacturers should use nutrition labelling on packaged food to inform consumers, and restrict the marketing of unhealthy foods and beverages to children.
- **Private sector participation:** In developing countries, private companies must complement governmental efforts to develop programmes to combat NCDs by:
 - establishing tobacco free workplaces
 - improving access to and affordability of safe, effective and quality medicines and technologies in the prevention and control on non-communicable diseases
- **Better Urban planning:** It should support safe and pleasurable physical activity (For eg. pedestrian and bicycle lanes in Lucknow, open park gyms in Delhi), and also ensure sufficient green spaces and a pollution free environment.
- **Spread awareness:** Spreading awareness about unhealthy lifestyle choices and building a robust early screening system.

8. CULTURE

8.1. UNESCO GLOBAL GEOPARK NETWORK STATUS

Why in news?

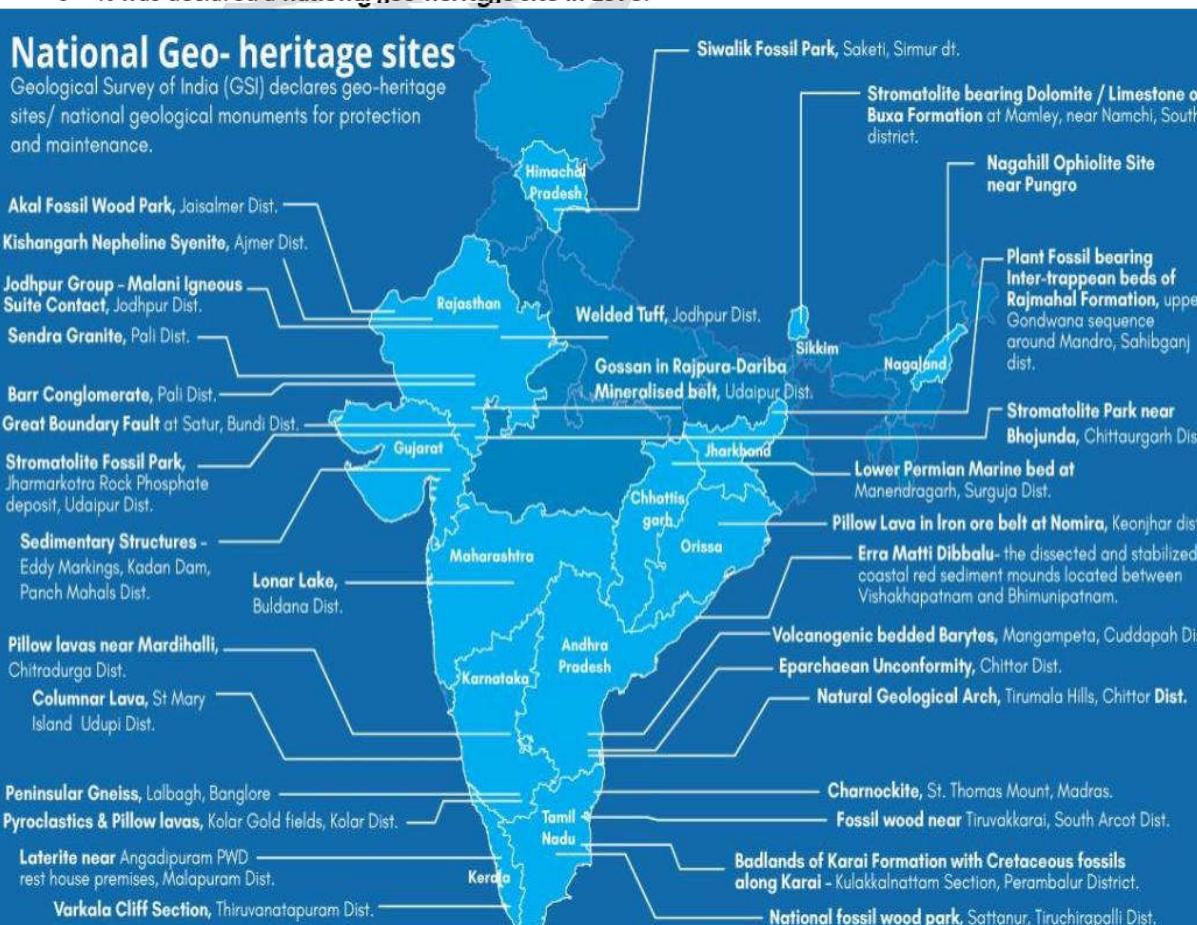
Recently Geological Survey of India (GSI) chose heritage locations in **Maharashtra** and **Karnataka** for UNESCO Global Geopark Network site status.

What is UNESCO Global Geopark Network Status?

- **UNESCO Global Geoparks** are single, unified geographical areas where sites and landscapes of international geological significance are managed with a holistic concept of protection, education and sustainable development.
- It aims to enhance awareness and understanding of key issues facing society, such as using our earth's resources sustainably, mitigating the effects of climate change and reducing natural disasters-related risks.
- **The Global Geoparks Network (GGN)**, is a legally constituted not-for-profit organisation. Its membership is obligatory for UNESCO Global Geoparks.
- At present, there are **140 UNESCO Global Geoparks** in **38 countries**.
- An aspiring Global Geopark must have a dedicated website, a corporate identity, comprehensive management plan, protection plans, finance, and partnerships for it to be accepted.
- As of now there is **no geo-heritage site from India is included under UNESCO Geo park Network**.

About the sites chosen:

- **Lonar Lake, Maharashtra:**
 - It is the **world's oldest meteoric crater** formed around 50,000 years ago and the **only one formed in basalt rock**.
 - It is a salt water lake.
 - It became a **national geo-heritage site in 1979**.
- **St. Mary's Island and Malpe Beach, Karnataka:**
 - It is a **hexagonal mosaic of basaltic rocks** in an island off Udupi.
 - It is estimated to be an **88-million-year-old formation** that goes back to a time when Greater India broke away from Madagascar.
 - It was declared a **national geo-heritage site in 1975**.



8.2. AZAD HIND GOVERNMENT

Why in news?

On 21-October-2018, Government celebrates the 75th Anniversary of formation of Azad Hind Government.

Azad Hind Government

- Subhas Chandra Bose on October 21, 1943, established the **provisional Azad Hind government in Singapore**. He was the leader of Azad Hind Government and also the Head of State of this Provisional Indian Government-in-exile.
- It was a **part of the freedom movement**, originating in 1940s outside India with a purpose of allying with Axis powers to free India from British rule.
- The existence of the Azad Hind Government gave a **greater legitimacy to the independence struggle** against the British.
- The **role of Azad Hind Fauj or the Indian National Army (INA)** had been crucial in bequeathing a much needed impetus to India's struggle for Independence.

Indian National Army (INA)

- The idea of INA was first conceived in Malaya by **Mohan Singh**.
- The Indian National Army was **founded by prisoners of wars** of British Indian Army captured by the Japanese in Singapore, Malaysia and other countries of Southeast Asia during the World War II.
- On 1 September 1942, the **first division** of INA was formed.
- The main task of gathering them and forming the INA was carried out by **Rashbehari Bose**, one of the stalwarts of the freedom movement. Later it was reconsolidated as an army by Subhas Chandra Bose.
- The INA was also at the forefront of **women's equality**, and the formation of a women's regiment, the **Rani of Jhansi Regiment** was formed as an all-volunteer women's unit to fight the British Raj as well as provide medical services to the INA.

INA Trials

- A joint court-martial of hundreds of captured INA soldiers, led by Colonel Prem Sehgal, Colonel Gurbaksh Singh Dhillon, Major General Shah Nawaz Khan, was held during 1945-46 at the Red Fort.
- Leaders of independence movement Jawaharlal Nehru, Sir Tej Bahadur Sapru, Kailashnath Katju, Bhulabhai Desai, Asaf Ali, along with Muslim league defended the comrades of Bose despite difference of ideology.
- The famous **INA trial sparked off massive unrest** across the country, including the strike by the ratings (sailors) and officers of the Royal Indian Navy and Air Force -- from the ports of Mumbai and Karachi to Madras, Vishakhapatnam and Calcutta in February 1946. The airmen too struck work at various places including Karachi and Kalaikunda (now in West Bengal).
- Historians termed this unrest as "**the last nail in the coffin**" of the British Empire.

8.3. VISHWA SHANTI AHIMSA SAMMELAN

Why in news?

Vishwa Shanti Ahimsa Sammelan (VSAS) 2018 took place in Mangi-Tungi in Satana Taluka of Nashik District, Maharashtra.

About Mangi Tungi Hills:

- These are the two hills of Sahyadri range.
- The hills have about 10 cave temples belonging to Jainism.
- These two peaks have special significance in Jainism because around 990 million Digambar Jains achieved salvation on these two hills. Therefore, the area is called 'Siddha Kshetra' (gateway to the state of enlightenment).
- Mangi Tungi is also the site of the 108-feet tall statue of Jain Tirthankar Bhagwan Rishabhdev. This is the tallest monolithic Jain statue in the world, erected in 2016.
- Before that 57-feet tall Gommateswar statue of Bahubali (Son of Lord Rishabhdev) at Sravan Belagola was the tallest single-rock Jain statue in the world.

CORE BELIEFS

Both sects (Swetambar - monks; Digambar - monks) aim to make sure their soul does not receive any more Karma so that the Karman inside of them will be eliminated.

Mahavira created the Three Jewels: Right Belief (Samyak Darshan) Right Knowledge (SamkyakJnan) and Right Conduct

In the Three Jewels are the Five Abstinences: Ahimsa (Non Violence), Satya (truthfulness), Asteya (Not stealing), Aparigraha (Non Acquisition), and Brahmacharya (Chaste Living).

Believe that souls: Exist forever, always independent, responsible for actions, can be liberated from cycle of Birth, Death, and Rebirth but not all souls are capable of this.

When human dies, the soul goes to its next body instantly. May not even be human or animal

About Lord Rishabhdev

- He is the first Jain Tirthankara (spiritual teacher). He is also called Adi Nath.
- He introduced the philosophy of Non-Violence.
- His symbol or emblem is Bull.
- He is considered as the founder of Ikshvaku dynasty to which Lord Rama belonged.

Tirthankara (ford-maker): Also called Jina (victor), is a great human being who attains liberation by destroying all his karmas and becomes a role model for every living being. A Tirthankara not only attains salvation himself but also helps all those who are sincerely trying to seek nirvana by preaching and guiding them.

8.4. SIR CHHOTU RAM

Why in news?

Recently, Prime Minister unveiled a statue of Sir Chhotu Ram (1881-1945) in Rohtak district.

Political activities of Sir Chhotu Ram

- He founded the **Jat Sabha**, followed by the launch of the **Jat Gazette** in 1915.
- He joined the **Congress** in 1916. In 1920, he launched Zamindaran Party, which later became the Unionist Party in 1923 in alliance with Fazl-e-Hussain and Sir Sikandar Hayat Khan.
- His party **won the general elections** of 1936 and formed a coalition government along with the Congress and Sikh Akali Dal. He became the Revenue Minister.

Reforms initiated by Sir Chhotu Ram

- He conceived the **Bhakra Dam project** way back in 1923. He, along with the King of Bilaspur, signed the Bhakra Dam project.
- He was considered as an **agrarian reformer**. Under him, **various legislations** were passed such as Punjab Land Revenue (Amendment) Act, 1929, Punjab Agricultural Produce Markets Act was passed in 1939 (Mandi Act), Punjab Relief of Indebtedness Act, 1943.
- For his work, the peasantry rewarded him with the titles of **Deen-bandhu** and **Rahbar-e-Azam**. Also, the British honoured him with a **knighthood** in 1937.

8.5. BATHUKAMMA FESTIVAL

Why in News?

- For the first time ever the New South Wales Parliament in Sydney, Australia celebrated the ethnic festival of Bathukamma.
- Pochampally Handloom Weavers also got a chance to promote their sarees in this celebration.

About Bathukamma

- Bathukamma that means 'Mother Goddess come Alive' is a colourful floral festival of Telangana celebrated towards the end of monsoon.
- Bathukamma is a beautiful flower stack of different unique seasonal flowers most of them with medicinal value, arranged in seven concentric layers in the shape of temple gopuram.
- The final day of Bathukamma, known as Pedha or Saddula Bathukamma falls two days before Dussehra.

About Pochampalli Sarees

- The art originated in 18th Century in Pochampally town of Telangana and is locally called as Chit-ku. The town is popularly known as the silk city of India.
- These sarees are culturally popular for the Ikat styling and designs (geometrical) imprinted on this fabric.
- The Pochampalli Ikat Sarees also have GI tag in their name.

9. ETHICS

9.1. GANDHIAN ETHICS

Gandhi and Morality

- The "highest form of morality" in Gandhi's ethical system is the practice of altruism (self-sacrificing behaviour performed for the benefit of others). For Gandhiji "true morality" disregards loss or gain, life or death, and is ever ready to sacrifice the self for an ideal.
- His religiosity was also unique, for he was a rationalist among believers and a believer amid rationalists. He says that 'the true sign of man's nobility is the fact that, instead of being driven about like a cloud before the wind, he stands firm and does what he deems proper'. He exerted that "morality should be observed as a religion".
- For Gandhiji, the substance of truth is morality, and non-violence is its essential part. Both need to be practiced because Truth finds expression through non-violence.

Gandhi on Violence

Most philosophers equate Violence with hatred, and non-violence with love. But, Gandhi focuses on the **violence of the status quo**: economic violence, cultural violence, psychological violence, and so forth. For Gandhi, if X is accumulating wealth and power, and his neighbour is in great need, and X does nothing to help alleviate the suffering of the other, then X contributes to and is complicit in the violence of the status quo.

Gandhi on Self-Realisation (Realisation of ultimate truth):

- He considers self-realisation as the *summum bonum* (ultimate purpose and goal) of life. For him,
 - Self-realisation presupposes a search for truth.
 - Himsa (Violence) makes complete self-realisation impossible.
 - Himsa against another is himsa against the self
- Happiness** in Gandhi's metaphysics is expressed as "an enlightened realisation of dignity and a craving for human liberty which prizes itself above mere selfish satisfaction of personal comforts and material wants", while the meaning of life is based on striving to actualise what he calls the law of love in action (the scheme of the universe).

Gandhian Ethics and other Ethical theories

- Virtue Ethics:** Gandhian ethics is normative and virtue based. His non-violence is based on the principle of universal love, even for enemies and those involved in terrible acts. It is rooted in truth, courage and standing against injustice.
- Deontology:** Like Kant, Gandhi focuses much of his attention on motives and intentions. But he is not a Kantian. He describes himself as a 'pragmatic idealist'. He focuses on results as well.
- Utilitarianism:** Gandhi emphasised on the integral, mutually reinforcing relationship between means and ends. He believed that one cannot use impure or immoral means to achieve worthy goals. That is why he rejected utilitarianism.
- Religious Ethics:** Gandhi's approach expresses an activist philosophy similar to the action-oriented philosophy of **karma yoga** in the Bhagavad-Gita: Act to fulfil your ethical duties with an attitude of nonattachment to the results of your actions. Gandhi claimed that an individual's "highest duty in life is to serve mankind and take his share in bettering its condition".

Gandhi on western pattern of production and consumption:

- He considered the manner of industrialisation in West as unsustainable and a chaos if adopted by populous countries like India and China.
- He believed in meeting needs rather than multiplying wants and meeting them in a ceaseless race.
- He proposed a humane economy which could develop human personality in a holistic way (instead of focusing on material possession), promote human creativity, and help in the realization of human potential.
- He advocated production by the masses, in place of mass production, to the extent that some industries and services would have to be on large scale, they would be run on no-profit basis by the state or a philanthropic minded private enterprise.

Gandhi's ethics of interconnectedness and mutuality:

- Gandhi believed in looking within oneself, change oneself and then change the world. For him, cultures and nations were not isolated entities, because they all played a special role in the making of human history.

- He believed in 'enlarged Pluralism' that every culture should learn from others. This was a way for him to open up the world to a harmonic exchange and a transformative dialogue among nations.
- For him, a spirit of genuine reciprocity and solidarity was not only a moral requirement, but also a geopolitical necessity.
- He said that Non-violent organizations of the world should help in bringing peace and interconnectedness among cultures and civilizations.

Global Influence:

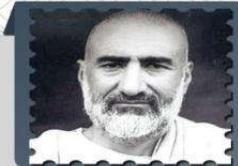
- Satyagraha has been used globally as an instrument of non-violent dissent against authoritarianism and a pragmatic tool of the powerless against the powerful.
- Khan Abdul Ghaffar Khan, Martin Luther King, Jr., Nelson Mandela, Lech Walesa, Vaclav Havel, Benigno Aquino, Jr. and many others successfully used it in their countries for political and social integration.
- In many countries, organized civic pressure and a principled commitment not to resort to violence has been used to fight colonialism and foreign occupation, advance women's and minority rights, and improve transparency and good governance.

He adapted and changed his views throughout his life. He started movements, called them off, he was always willing to negotiate and begin discussions. His boycotts, too, were based on principles, never against individuals. He shunned British goods but not British people. He used the ideas of Christianity, Islam, Jainism, and Buddhism and remained a devout Hindu.

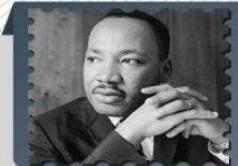
His life is a message regarding how to lead a public life as no security men were posted outside his Ashram, he was reachable to all, and his experiments were minutely dissected and criticised as well. There are scarcely few people in world who lived what they preached, and lived to such rightness, in spite of being engrossed so much in politics as Mahatma Gandhi did. He however followed a simple ideology that "it is not enough for thought to be based on truth, the life must express it".

GANDHI'S GLOBAL FOOTPRINT

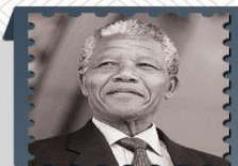
The Indian Independence movement may have witnessed the heyday of Gandhian non-violent action, but the ripples it left behind touched many other nations and influenced varied ideologies. Here's a snapshot of Gandhi's global impact.



Gandhian non-violence was already invoked during his lifetime by **Khan Abdul Ghaffar Khan**, also known as the "Frontier Gandhi". Few People know about Khan Abdul Ghaffar Khan as a Muslim Proponent of non-violence, Who stressed the compatibility of Islam and Satyagraha.



Often labelled as the "American Gandhi", **Dr. Martin Luther King, Jr.** recognized the value of Gandhi's legacy of non-violence and used it to strengthen his own campaigns in areas ranging from racial integration to voting rights.



Effective non-violent actions led by **Nelson Mandela** played a crucial role in crippling the brutal and racist apartheid regime in South Africa, helping establish a legitimate, democratically elected black majority government.



The non-violent **Arab Spring** awakenings in West Asia from 2009 to 2012 demonstrated that Gandhian non-violence could help to provide the disobedient space that is needed.

10. NEWS IN SHORT

10.1. CAPAM AWARDS

- Recently, Commonwealth Association for Public Administration and Management (CAPAM) awards were announced.
- Award category**
 - Innovation Incubation: Unnayan Banka (BIHAR):** It aims to provide "Quality Education for all" through integration of technology with a focus on ensuring continuous monitoring and accountability in the education system. Banka experiment will be replicated in about 5,000 schools across the country under **Unnat Bharat Abhiyan (UBA)**.
 - Gold Medal Winner and Innovation in Public Service Management: Unified Agriculture Markets (Karnataka):** Rashtriya e-Market Services Private Limited (ReMS) is a PPP initiative designed for One State – One Market and offers a complete technology requirement through its **Unified Market Platform (UMP)** and management solution for modernizing primary agricultural markets in state. It has been recognised as "**the Karnataka Model**" from the Government of India and has been adapted centrally to make "**One Nation – One Market**".
- CAPAM** is a non-profit association representing an international network of over 1100 senior public servants, Heads of Government, leading academics and researchers located in over 50 different countries across the Commonwealth. Department of Administrative Reforms and Public Grievances (DARPG), Ministry of Personnel, Public Grievances and Pensions is an institutional member of CAPAM.

10.2. ISSA GOOD PRACTICE AWARD, 2018

- The Employees' State Insurance Corporation (ESIC) has been awarded with 'ISSA Good Practice Award, 2018' at "Regional Social Security Forum for Asia and the Pacific" held recently.
- It has been awarded for the measures taken by it for extension of coverage such as:
 - SPREE (Scheme for Promoting Registration of Employers and Employees)
 - Reduced rate of contribution rates for 24 months in newly implemented areas
 - Raising the wage limit for coverage under the ESI Act, etc.

10.3. UNITED NATIONS HUMAN RIGHTS COUNCIL

- Recently India was elected with highest number of votes by General Assembly to the **United Nations Human Rights Council (UNHRC)**.

- UNHRC is a specialized agency of United Nations to protect and promote Human Rights across the world and is successor body of the UN Commission on Human Rights (UNCHR) set up by UN General Assembly in 2006.
- Members are barred from occupying a seat for more than two consecutive three-year terms.

10.4. SOUTH-EAST ASIA REGULATORY NETWORK

- Union Minister of Health and Family Welfare launched the Information Sharing Platform (ISP) Gateway for SEARN developed by Centre for Development of Advanced Computing (CDAC) at 2nd World Conference on Access to Medical Products: Achieving the SDGs 2030'.
- It was launched by the WHO South-East Asia Region member countries to enhance information sharing, collaboration and convergence of medical product regulatory practices across the Region to guarantee access to high-quality medical products. It is led by a steering group of which India is a permanent member.

10.5. SOVEREIGN BLUE BOND

- Recently, Republic of Seychelles launched the world's first sovereign blue bond.
- The Bond and the programs of marine activities have been developed by the support of **World Bank** and **Global Environment Facility** and is part of the project under the World Bank's **South West Indian Ocean Fisheries Governance and Shared Growth Program (SWIOFish)**.
- Blue bonds are debt instruments issued by the governments, development banks etc. to raise capital from impact investors to finance marine and ocean-based projects that have positive environmental, economic and climate benefits. They have been inspired by the concept of **Green Bonds**.

10.6. GOVERNMENT E-PAYMENTS ADOPTION RANKING

- India's overall ranking on the government's adoption of e-payments has moved up to 28th in 2018, from 36th in 2011 according to a **Government E-Payments Adoption Ranking (GEAR)** by **The Economist Intelligence Unit** commissioned by payments company Visa.
- GEAR is a global Index to check how governments around the world are adopting digital payments.

10.7. INTERNATIONAL YEAR OF MILLETS

- Acting on India's proposal, the Food and Agriculture Organisation (FAO) has agreed to celebrate

- 'International Year of Millets' in 2023. 2018 is being celebrated as '**National Year of Millets**' in India which will help raise awareness.
- Millets are the small-seeded hardy crops belonging to Gramineae family which can grow well in dryland areas and marginal conditions of soil fertility. India is the largest producer of millet in the world (approximately 17 MMT per year).
- These have often been called the coarse grains; however, due to their nutritional contributions, these are now being referred as '**nutria-millets/nutria-cereals**'.

10.8. GLOBAL FINANCIAL STABILITY REPORT

- International Monetary Fund recently released its semiannual edition of Global Financial Stability Report (GFSR) titled "A decade after the Global Financial Crisis: Are we safer?".
- The report observes that a decade after financial crisis the banking system has become stronger with more oversight and more capital but some risks have also intensified such as escalation of trade tensions, greater pressure on emerging market economies, further tightening of financial conditions etc.
- IMF has also reduced the expected expansion global economy to 3.7 percent this year and next year down by 0.2 percentage points from an earlier forecast due to ongoing trade war.

10.9. UN INVESTMENT PROMOTION AWARD

- Recently, Invest India was awarded United Nations Investment Promotion Award
- **About United Nation Investment Promotion Awards**
 - It is an annual award which is being organised since 2002 by UNCTAD to honour Investment promotion agencies and the exchange of best practice in investment promotion.
- **About Invest India** - It is India's investment promotion and facilitation agency which has been established as a non-profit investment venture under the **Department of Industrial Policy and Promotion**. It focuses on sector-specific investor targeting and development of new partnerships to enable sustainable investments in India.
- Invest India has received the UN award for its efforts in supporting a major global wind turbines company in establishing blade manufacturing plant in India while committing to train local staff and produce 1 GW of renewable energy.

10.10. FUTURE POLICY GOLD AWARD

- Sikkim has won the **UN Food and Agriculture Organization's (FAO)** Future Policy Gold Award for its achievement in becoming the world's first totally organic agriculture state.

- It is the first award that celebrates policies rather than people on an international level that create better living conditions for current and future generations.

10.11. MILITARY EXERCISES

- **IBSAMAR**: It is a joint Multi – National Maritime Exercise between the Indian, Brazilian and South African Navies. Its sixth edition was held at Simon's Town, South Africa.
- **JIMEX-18**: It is a bilateral maritime exercise between India and Japan held at Visakhapatnam. It was conducted after five years. It will comprise of harbour phase (professional and social interactions between the crews of ships) and a sea phase (warfare exercises) of four days each.
- **SAHYOG HOP TAC-2018**: It is maiden joint exercise of between Coast Guards of India and Vietnam held in the Bay of Bengal off the Chennai coast. The exercise encompassed a scenario of hijacking of an oil tanker and subsequent rescue of its crew in a coordinated anti-piracy joint operation as well as preventive efforts for marine environment protection.

10.12. OPERATION SAMUDRA MAITRI

- Recently, India launched 'Operation Samudra Maitri' to assist the survivors of earthquake and consequent Tsunami in Central Sulawesi province of Indonesia. This operation includes both air and naval assistance.

10.13. MISSILE PRAHAAR

- India recently successfully test-fired missile Prahaar off Odisha coast.
- It is a surface-to-surface short-range tactical ballistic missile developed by DRDO with a strike range is 150 km.
- It can carry warhead up to 200 kg. It uses solid propellant and travels at a speed of Mach 2.

10.14. STAPCOR-2018

- The International Conference on Status and Protection of Coral Reefs (STAPCOR)-2018 took place recently at Bangaram Coral Island of Lakshadweep. Theme of the conference was "**Reef for Life**".
- It takes place every 10 year after the foundation of STAPCOR in 1998 when heavy bleaching of corals was observed internationally because of Global warming, climate change and El-Nino effect.
- Other prominent developments-
 - Year 2018 has been declared as 3rd decadal International year of Reefs.
 - An International Atoll Research Centre, with world class infrastructures for scientific research on corals will be established in Lakshadweep.

10.15. NATURAL CONSERVATION ZONES

- Recently NGT designated Ministry of Environment, Forests and Climate Change as the nodal agency to ascertain coherency between sub-regional plans of states for the protection of Natural Conservation Zones (NCZ) and regional plans by the National Capital Region Planning Board (NCRPB).
- Natural Conservation Zone is earmarked for conservation, rather than real estate and other infrastructural developments. In this, construction is allowed on only 0.5 percent of zone but only for regional recreational activities like regional parks and sanctuaries and construction for commercial, residential, tourism, and other real estate purposes is strictly prohibited.
- The Regional Plan 2021 for the Delhi NCR region by NCRPB zoned all Aravalli areas (forests, water bodies, rivers, groundwater recharge areas) as Natural Conservation Zone. But Haryana has still not declared any sanctuary in the Aravallis.

10.16. CORSIA

- Recently, the Directorate General of Civil Aviation (DGCA) issued draft guidelines for aeroplane operators flying on international routes for implementation of Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).
- CORSIA is the International Civil Aviation Organization (ICAO) resolution for a global market-based measure to address CO₂ emissions from international aviation from 2021 to 2035.
- All civilian international operations undertaken by operators are covered by CORSIA with exceptions for humanitarian, medical and fire-fighting flights.

10.17. FIRECRACKERS DEVELOPED BY CSIR

- CSIR scientists have developed Less Polluting Firecrackers which are environment friendly and 15-20 % cheaper than the conventional ones. These crackers have been named as safe water releaser (SWAS), safe minimal aluminium (SAFAL) and safe thermite cracker (STAR).
- It has unique property of releasing water vapour and /or air as dust suppressant and diluent for gaseous emissions and matching performance in sound with conventional crackers.

10.18. CHINA'S 'ARTIFICIAL MOON' PROJECT

- China is planning to launch its own 'artificial moon' by 2020 to replace streetlamps and lower electricity costs in urban areas.

- It is an imitation celestial body, essentially an illuminated satellite which will bear a reflective coating to cast sunlight back to Earth at night.
- It would orbit at about 500km around the Earth, compared to the moon's 380,000 km.
- It would be eight times brighter than the Earth's moon.
- The satellites' brightness and service time are both adjustable, and the accuracy of the lighting can be controlled.
- However, China is not the first country to try beaming sunlight back to Earth. In the 1990s, Russian scientists used giant mirrors to reflect light from space.

10.19. IBUKI-2

- Recently Japan launched greenhouse gas observation satellite Ibuki-2.
- The satellite is designed to gather data on the densities of carbon dioxide, methane, carbon monoxide and PM2.5.
- Japan also launched the United Arab Emirates' first locally made satellite, the KhalifaSat Earth observation satellite.

10.20. FALL ARMYWORM PEST IN INDIA

- The occurrence of Fall Armyworm (FAW) has been recently reported from maize fields in Karnataka and also parts of Andhra Pradesh, Telangana, Tamil Nadu, Maharashtra and Gujarat.
- FAW (scientifically known as Spodoptera frugiperda) is a polyphagous (feeding on many foods) pest that has been seen in the Americas since several decades and in recent years it has also appeared in many parts of Africa.
- There are two genetically identified strains, The M-strain (Maize) which attacks maize, sorghum and cotton and The R-strain(rice) which attacks rice, pasture, turf grass, Bermuda grass, millet and alfalfa, etc.

10.21. ONEER

- Council of Scientific and Industrial Research, Indian Institute of Toxicology Research (CSIR-IITR), Lucknow has developed an innovative technology for "Drinking Water Disinfection System" with Trade name "Oneer™".

10.22. ASTANA DECLARATION

- Recently, Global Conference on Primary Health Care by UNICEF and World Health Organisation (WHO), has concluded with Astana Deceleration in Kazakhstan. All the 192-member countries of the United Nations, including India, signed the Astana Declaration.

- It is the global commitment to strengthen Primary Health Care. This declaration reaffirms the historic 1978 Declaration of Alma-Ata. **Alma-Ata Declaration** was the first declaration which identified Primary Health Care as a key to the attainment of the goal of Health for All.

10.23. TIME BANK MODEL FOR THE ELDERLY

- Recently an expert panel on elderly persons at NHRC has recommended that India should adopt the 'time bank' model on the lines of Switzerland.
- Under the 'time bank' scheme, instead of saving money people save time. Volunteers take care of the elderly who need help and the number of hours spent in taking care of senior citizens are deposited into their personal account of social security system.
- When the volunteer himself gets old and needs someone for help, he/she could use the 'time bank' and a volunteer is assigned to take care of him/her.

10.24. NOBEL PEACE PRIZE 2018

- Nobel Peace Prize has been awarded to **Denis Mukwege** and **Nadia Murad** for their efforts to end the use of sexual violence as a weapon of war and armed conflict.
- **Denis Mukwege**
 - Known as "Doctor Miracle", he is a Congolese doctor, who along with his staff, have treated thousands of patients who have fallen victim to sexual assaults.

- He is an outspoken critic of the abuse of women during war who has described rape as "a weapon of mass destruction." His work has also been of an acclaimed 2015 film titled: "The Man Who Mends Women."

- **Nadia Murad**

- A human rights campaigner, she is one of an estimated 3,000 Yazidi girls and women who were victims of rape and other abuses by the IS army. She is currently working to bring the IS before the International Criminal Court.
- In 2016, she was named the UN's first Goodwill Ambassador for the Dignity of Survivors of Human Trafficking. She also founded and dedicated herself to an initiative called 'Our Peoples' Fight'.
- Her courageous book, *The Last Girl*, speaks about her peaceful childhood in rural Iraq, the Islamic State-led genocide, the destruction of her community, and her escape to Germany.

10.25. SEOUL PEACE PRIZE 2018

- Recently, Prime Minister Narendra Modi has been conferred with Seoul Peace Prize 2018.
- **About Seoul Peace Prize** - They were established in 1990 to commemorate the success of the 24th Olympic Games held in Seoul and are awarded biennially to individuals for their contributions to the harmony of mankind, reconciliation between nations and to world peace.