



INSIGHTSIAS

SIMPLIFYING IAS EXAM PREPARATION

INSIGHTS into EDITORIAL

NOVEMBER 2018

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INSIGHTS into EDITORIAL

1. CHURN IN THE NEIGHBOURHOOD: BHUTAN | NEW PM, NEW CHALLENGES

Context:

- **Tshering Tobgay** will be new Prime Minister of Bhutan. **Druk Nyamrup Tshogpa Party** has won the recent general elections in Bhutan.
- The National Assembly is the lower house of Bhutan Parliament. This is the third general election after democracy was adopted in Bhutan in 2008.

India Bhutan Relations:

- India and Bhutan have had **long-standing diplomatic, economic and cultural relations**. Bhutan and India relations are governed by a **friendship treaty** that was renegotiated only in 2007, subjecting the Himalayan nation's security needs to supervision.
- Treaty of Friendship in 2007, which brought into the **India-Bhutan relationship "an element of equality."**
- The Treaty provides for **perpetual peace and friendship, free trade and commerce, and equal justice to each other's citizens.**

Bhutan's Significance to India



India-Bhutan treaty of Friendship time line:

- **On August 8, 1949** Bhutan and India signed the **Treaty of Friendship**, calling for peace between the two nations and non-interference in each other's internal affairs.
- India re-negotiated the **1949 treaty with Bhutan** and signed a **new treaty of friendship in 2007**.
- The new treaty replaced the provision requiring Bhutan to **take India's guidance on foreign policy with broader sovereignty** and not require Bhutan to obtain India's permission over arms imports.
- Under the **2007 India-Bhutan Friendship Treaty**, the two sides have agreed to "cooperate closely with each other on issues relating to their national interests."
- Neither Government shall allow the use of its territory for activities harmful to the national security and interest of the other

- A scheme titled **“Comprehensive Scheme for Establishment of Hydro-meteorological and Flood Forecasting Network on rivers Common to India and Bhutan”** is in operation. The network consists of 32 Hydro-meteorological/ meteorological stations located in Bhutan and being maintained by the Royal Government of Bhutan with funding from India. The data received from these stations are utilized in India for **formulating flood forecasts**.

Importance of Bhutan:

- Bhutan is a **buffer state** between **India and China**. Bhutan shares a **470 km long border with China**.
- **Strategic importance:** The **Chumbi Valley** is situated at the **trijunction** of Bhutan, India and China and is **500 km away** from the **“Chicken’s neck”** in North Bengal, which connects the northeast with rest of the country.
- **To contain insurgency in North-East:** Bhutan has in the past cooperated with India and helped to flush out militant groups like United Liberation Front of Asom (ULFA) and National Democratic Front of Bodoland (NDFB) from the Himalayan nation.
- **To check Chinese inroad in Bhutan:** China is interested in establishing formal ties with Thimphu, where it does not yet have a diplomatic mission. Bhutan is strategically important for both India and China. Chinese territorial claims in western Bhutan are close to the Siliguri Corridor.
- Beijing is reportedly insisting on Bhutan **establishing trade and diplomatic relations** as a quid pro quo for a **border settlement**.
- A **Joint Group of Expert (JGE) on Flood Management** has been constituted between India and Bhutan to discuss and assess the probable causes and effects of the **recurring floods and erosion** in the southern foothills of Bhutan and adjoining plains in India and recommend to both Governments appropriate and mutually acceptable remedial measures.

Commercial Relations between India and Bhutan:

- India is **Bhutan’s largest trading partner**. India and Bhutan have signed an Agreement on Trade, Commerce and Transit on 12th November 2016, which provides for a free trade regime between the two countries **aimed at boosting the bilateral trade for mutual benefit**.
- The Agreement also aims at **facilitating Bhutan’s trade** with countries through an improved procedure for containerised cargo, striving towards use of electronic means to facilitate the movement of transit cargo, additional entry/exit points in India, etc.
- Imports from India were Rs5,650cr accounting for **80% of Bhutan’s total imports**. Bhutan’s exports to India stood at Rs3,270 cr (including electricity) and constituted **90% of its total exports**. **One-third of Bhutan’s exports to India is electricity**.
- Other items of export include minerals such as ferro-silica (the Bhutanese have been complaining that these exports have been declining), cement and dolomite.
- The Government is planning to **build a mini dry port** in the border town of **Phuntsholing** to **promote exports**, that are plagued by **logistical difficulties** due to the difficult terrain and poor connectivity. Bhutan sources the majority of its import requirements from India.

Conclusion:

- Hydro-electric power generated by **Bhutan’s run-of-the river dams** is the **economic bedrock** of the India-Bhutan relationship.
- The updated India-Bhutan Friendship Treaty lays the foundation for their future development in the **21st century**.
- Tsheing’s handling of relations with Bhutan’s **two giant neighbours** will not be an easy task. But it is possible for Bhutan to establish ties with China as well as India without disturbing their regional interests.
- Bhutan could consider “leaving the **tri-junction (Doklam)** unresolved while settling the remaining border issues and proceeding towards diplomatic relations with China.”
- This could trigger heightened **Sino-India “economic and diplomatic competition in Bhutan without eroding the substance of India-Bhutan relations.”**

2. THE UNIFIER OF MODERN INDIA

Context:

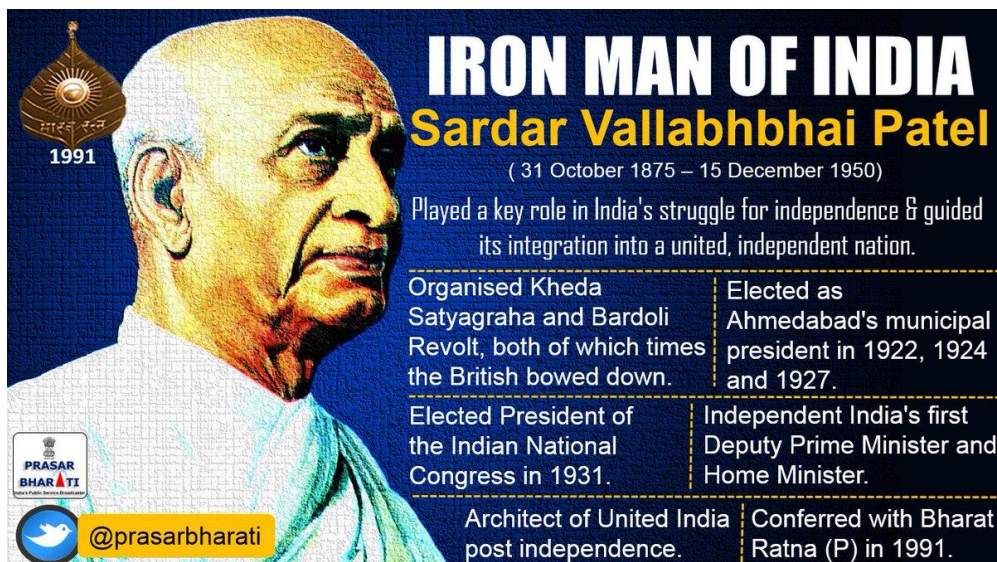
- Prime Minister Narendra Modi inaugurated the **Statue of Unity – the world's tallest statue of Sardar Vallabhai Patel**, in Gujarat's Kevadiya, on Patel's birth anniversary.
- He became one of the most influential leaders in Gujarat as he organised the peasants of **Kheda, Borsad, and Bardoli** in Gujarat in a **non-violent civil disobedience movement** against oppressive policies imposed by the British Raj.
- Sardar Vallabhbhai Patel**, popularly known as **the Iron Man of India**, one of the most influential personalities to have fought for Independence, Sardar Patel was born in Gujarat, on October 31, 1875.
- Hence, the day is celebrated as his birth anniversary and is also observed as **Rashtriya Ekta Diwas or National Unity Day**.
- Remembering Sardar Patel's stupendous role in **integrating the princely States into independent India**.

Accession process:

- The limited scope of the **Instruments of Accession** and the promise of a **wide-ranging autonomy** and the other guarantees they offered.
- It gave sufficient comfort to many rulers, who saw this as the best deal they could strike given the lack of support from the British, and popular internal pressures.
- The biggest problems, however, arose with a **few border states**, such as Jodhpur, which tried to negotiate better deals with Pakistan, **with Junagadh**, which actually did accede to Pakistan, and **with Hyderabad and Kashmir**, which declared that they intended to remain independent.

Use of coercion when needed by launching 'Operation Polo':

- Patel was also compelled to use coercion by **launching 'Operation Polo'** to liberate and **integrate Hyderabad** after the Nizam of Hyderabad entertained false hopes of either joining Pakistan or remaining independent.
- In a swift operation lasting five days, Hyderabad State was liberated in September 1948. It was the most critical time when the **country's political unity** was in jeopardy, India found the **man of the moment** in Sardar Patel.
- He displayed amazing **patience, tact and a steely determination** in dealing with an intransigent ruler, who refused to see the writing on the wall and even wanted to take the issue to the **United Nations**.
- Displaying statesmanship of the highest order, Sardar Patel prevented the attempts to not only Balkanise India but **internationalise the issue as well**.



IRON MAN OF INDIA
Sardar Vallabhbhai Patel
(31 October 1875 – 15 December 1950)

Played a key role in India's struggle for independence & guided its integration into a united, independent nation.

Organised Kheda Satyagraha and Bardoli Revolt, both of which times the British bowed down.	Elected as Ahmedabad's municipal president in 1922, 1924 and 1927.
Elected President of the Indian National Congress in 1931.	Independent India's first Deputy Prime Minister and Home Minister.
Architect of United India post independence.	Conferred with Bharat Ratna (P) in 1991.

Iron Man Force behind unification:

- Sardar Patel's **foresight and tactful navigation** of the most turbulent period in post-Independence, and the resolve he demonstrated in integrating the more than **500 disparate princely States (565 around)** into the Dominion of India is an unparalleled accomplishment in modern history.
- Hailing Patel's feat, **Lord Mountbatten**, the last Viceroy of India, had said: "By far the most important achievement of the present government is the **unification of the States into the Dominion of India**."
- Patel was a **statesman** with a strong sense of **realpolitik**, a realist to the core and an earthy politician whose sole **aim was to build a strong and united India**.
- Patel's **wisdom, foresight, patriotism, tact, persuasive powers and abiding commitment** to fair play enabled him to untangle a **highly complex political and social problem** without triggering any kind of revolt or civil unrest.

- The complicated case of **Junagarh, Gujarat**, was also handled with dexterity by Patel. The **problem of Jammu and Kashmir** may have been resolved long back had Sardar Patel been given a free hand to handle it at that time.

The Man of Integrity with “Nation First” Slogan stand as an Architect of the steel frame:

- The **Iron Man of India** was the **chief architect of India’s steel frame**, the civil services. Thus, the **All India Services** were seen as an important **cementing force** in promoting the unity and integrity of the nation.
- He readily accepted the **Mahatma Gandhi’s advice** to withdraw his candidacy for the post of Congress President in favour of Pandit Nehru in 1946, although a majority of State Congress committees supported his candidature.
- It once again proved his noble intention of placing the country’s interests above self.
- His **love for the motherland** was best described by **Maulana Azad** when he said: “He made his choice out of two courses that come before a man, namely would he live for his country or for himself? Sardar chose his country.”
- It is in the fitness of things that the **National Police Academy (IPS Trainee- Sardar Vallabhbhai Patel National Police Academy)** located on the outskirts of Hyderabad, Telangana, is named after him, as a tribute to the statesman.

Conclusion:

- “By common endeavour we can raise the country to a new greatness, while a lack of unity will expose us to fresh calamities.”
- These pragmatics but profound remarks defined the **vision and the sterling character** of Sardar Vallabhbhai Patel, the **principal unifier of modern India**.

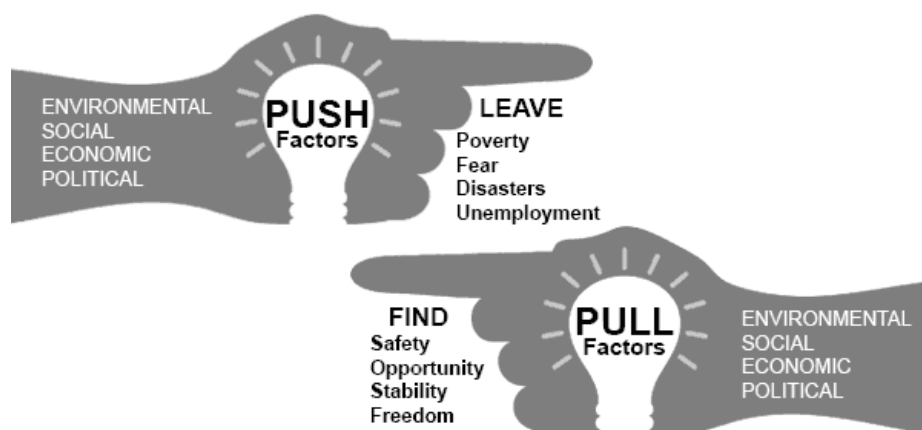
Our Duty: Making Sardar Patel dreams into Reality

- The **‘Statue of Unity’ is a symbol of both the unity of hearts and the geographical integrity of our motherland**.
- It is a reminder that divided, we may not be even able to face ourselves. **United**, we can face the world and scale new heights of growth and glory.
- Sardar Patel worked with astonishing speed to dismantle the history of imperialism and create the geography of unity with **the spirit of nationalism**. He **saved India from Balkanization** and integrated even the weakest of limbs into the national framework.
- Today, we, the **130 crore Indians** are working shoulder to shoulder to build a New India that is **strong, prosperous and inclusive**.
- Every decision is being taken to ensure that the fruits of development **reach the most vulnerable**, without any corruption or favouritism, just as Sardar Patel would have wanted it.

3. SUPPORT FOR LIVES ON THE MOVE

Introduction: Internal Migration in India

- **Internal migration** can be driven by **push and/or pull factors**.
- In India, over the recent decades, **agrarian distress** (a push factor) and an increase in **better-paying jobs** in urban areas (a pull factor) have been drivers of internal migration.
- The **Economic Survey 2017** estimates that the magnitude of inter-state migration in India was close to **9 million** annually **between 2011 and 2016**.



- Data show that **employment-seeking** is the principal reason for migration in regions without conflict. Instead of long-term migration, there are large flows of **short-term migrant labour**.
- Though migration is expected to enhance consumption and lift families out of absolute poverty at the origin, it is **not free from distress** as this distress due to unemployment or underemployment in agriculture, natural calamities, and input/output market imperfections.
- **More than a third of India's population** are internal migrants, while **75% of the youth** of the country are migrants.

Some benefits of migration:

- Internal migration has resulted in the **increased well being of households**, especially for people with **higher skills, social connections and assets**.
- Migrants belonging to lower castes and tribes have also brought in enough income to **improve the economic condition** of their households in rural areas and lift them out of poverty.
- Data show that a **circular migrant's earnings** account for a higher proportion of household income among the lower castes and tribes. This has helped to improve the **creditworthiness of the family members** left behind as they can now obtain loans more easily.
- Thus, there exists a **need to scale-up interventions** aimed at enhancing these benefits from circular or temporary migration.
- Interventions targeting **short-term migrants** also need to recognise the fact that short-term migration to urban areas and its **role in improving rural livelihoods** is an ongoing part of a long-term economic strategy of the households.
- **Local interventions by NGOs** and **private entrepreneurs** also need to consider **cultural dimensions** reinforced by caste hierarchies and **social consequences** while targeting migrants.

Why a national policy on Internal Migration?

- **Narrowly defined** migrant-focussed interventions will **not enhance** the capabilities of migrants that could lead to increased earnings and an eventual exit from poverty.
- **Continued dynamic interventions** over long periods of time would yield better results compared to single-point static interventions, especially in the context of **seasonal migrants**.
- **Local bodies and NGOs** which bring about **structural changes in local regions** need to be provided more space.
- There is a **lack of focussed intervention** aimed at migrants. Interventions aimed at enhanced skill development would enable easier entry into the labour market.
- We also need **independent interventions** aimed specifically at addressing the **needs of individual and household migrants** because household migration necessitates access to infrastructure such as housing, sanitation and health care more than individual migration does.
- **Various interventions must complement each other**.
- As **remittances from migrants** are increasingly becoming the **lifeline of rural households**, improved **financial infrastructure** to enable the smooth flow of remittances and their effective use require more attention from **India's growing financial sector**.

Need of the Hour: A National Policy on Internal Migration:

- **Less than 20% of urban migrants** had prearranged jobs and nearly two-thirds managed to find jobs within a week of their entry into the city, as per a **study made in Tamil Nadu**.
- Access to information on employment availability through the National laws is the need of the hour. There is a need to address conditions of work, terms of employment and access to basic amenities.
- There is a need to distinguish between **policy interventions aimed at "migrants for survival" and "migrants for employment"**. The interventions should also look at the **increase of the skill levels**.
- Government interventions should be supported by **market-led interventions** such as **microfinance initiatives**.
- Policy interventions have to consider push factors, which vary across regions and understand the **heterogeneity of migrants**.

Way Forward:

- **India needs smart urbanisation in addition to Migration policy:**
- A **strategic shift** is needed the way Government looks at migrants.
- Over **34% of India's current population** lives in **urban areas**, rising by 3% since 2011.

- By some estimates, **India's urban population could increase to 814 million by 2050**. And yet, cities look and feel downtrodden, riven with poverty and poor infrastructure, with little semblance of **urban planning**.
- We need to **empower our cities**, with a **focus on**:
 1. land policy reforms,
 2. granting urban local bodies, the freedom to raise financing and
 3. enforce local land usage norms.
- Key areas to have fulfil **Smart city mission**
 1. Socio economic aspect
 2. Physical components
 3. Institutional mechanism
- If these three objectives are **woven together and in each other**, it is easy to diversify and address number of problems like mobility, development of physical infrastructure, ICT, health, and economy.

4. CHOKED BY SMOG: ON AIR POLLUTION

Context:

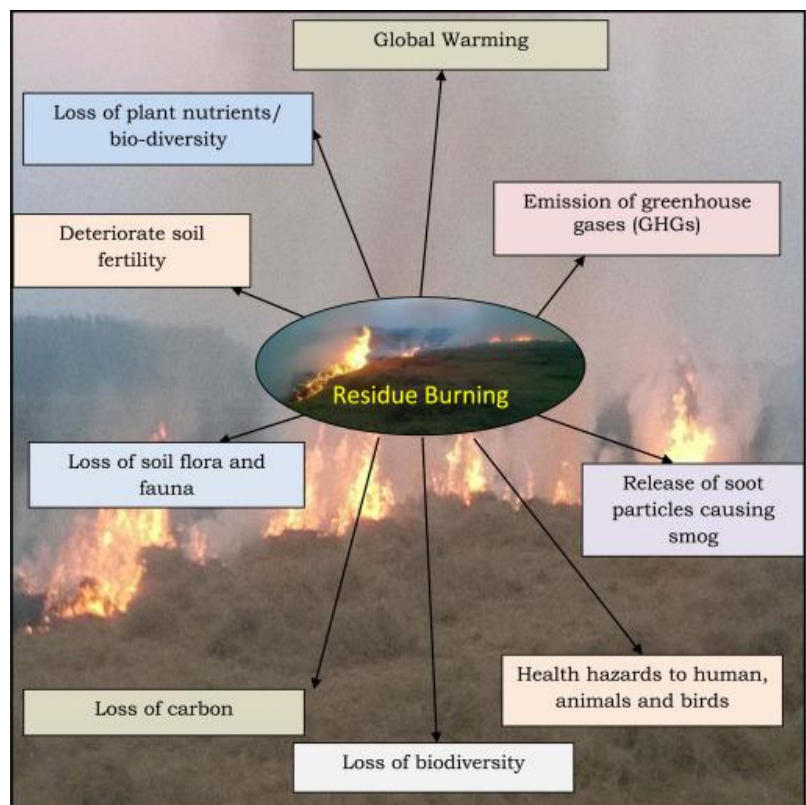
- **Air pollution is choking** several cities in the **northern States** once again, as changes in temperature and slowing winds **trap soot, dust and fine particulate matter**.
- The **National Capital Region** is badly hit, as the burning of agricultural residue in Punjab and Haryana is releasing large volumes of smoke containing, among other pollutants, **highly damaging fine particulates, or PM2.5**.

Recent Reports of Air Pollution:

- The **problem of Air Pollution is aggravated by** the burning of urban waste, diesel soot, vehicular exhaust, road and construction dust, and power generation.
- The **UN Environment Programme's recent report titled 'Air Pollution in Asia and the Pacific: Science-Based Solutions'** has sounded a warning, pointing out that **only 8% of the population** in the countries of the region get to breathe air of acceptable quality.
- One study of **degradation of Delhi's air** over a 10-year period beginning 2000 estimated premature mortality to have **risen by as much as 60%**.
- According to the **Agriculture Ministry, 23 million tonnes** of paddy straw is burnt in **Punjab, Haryana and UP** every year.

Invisible consequences of Stubble Burning:

- Every day about **93% of the world's children** under the **age of 15 (1.8 billion children)** breathe **polluted air** that puts their health and development at serious risk.
- The World Health Organisation (WHO) said in a new report that puts into numbers the devastating impact that air pollution is having on the global population's health.
- According to a report by the **United Nations Environment Programme (UNEP)**, India had the **highest share of welfare costs** (or a loss of income from labour), of about **\$220 billion (about ₹1.4 trillion)**, in South and South-East Asia of a combined total of \$380 billion **from mortality** due to air pollution.
- The **global mortality costs from outdoor air pollution** are projected to rise to about **\$25 trillion by 2060** in the absence of more stringent measures.



- At regional and national scale, China's welfare costs from mortality were the highest at **nearly \$1 trillion** followed by the **Organisation for Economic Corporation and Development (OECD)** countries with a combined total of \$730 billion, the report of a 2016 projection by the OECD.

Government Initiatives: Subsidies for Equipments To Solve the Problem of Stubble Burning:

- There is a **50% subsidy to farmers**, and a 75% waiver to cooperative societies, agencies that rent out equipment, farmers' interest groups or gram panchayats to buy such machines.
- States have got nearly Rs.650 crore to help farmers buy subsidised equipment such as **Happy Seeder, Paddy Straw Choppers and Zero Till Drill**.
- While banning stubble burning in their States, the Governments of Punjab and Haryana have made the **use of the Straw Management System (SMS) compulsory**.
- The **cumbersome formalities** must be removed while **granting subsidies**.

Conclusion:

- Although **India has nine of the 10 most polluted cities in the world**, it has not taken consistent action on pollution.
- **Tens of millions** live with ambient air quality that is well short of even the relaxed parameters the country has set for fine particulates, compared with those of the **World Health Organisation**.
- This year's '**severe**' **air quality rating for Delhi** and poor conditions prevailing in other cities in the Indo-Gangetic Plain should compel a decisive shift in policy.
- The Centre and the State governments **need to get into crisis mode to dramatically reduce emissions**.
- They must address the **burning of carbon**, which is a **direct source**, and emissions with **oxides of nitrogen and sulphur from vehicles** that turn into fine particulates through atmospheric reactions.
- Failure to take **sustainable and urgent measures** will **inflict long-term harm on public health**, affecting children even more by putting them at higher risk for diseases.

Way forward:

- An **innovative approach** could be to use climate change funds to turn farm residues into a resource, using **technological options** such as converting them into biofuels and fertilizers.
- There are reports that **subsidised machines** being provided by the Government have **not reached many villages** and wherever given, the number is too low.
- Proactive engagements are necessary to persuade and reassure farmers.
- It is important to find **other uses for stubble** such as biomass, which may encourage farmers to look for alternative sources of income.
- India should at least now give **high importance to the WHO warning** about air pollution being the **new tobacco**. Sharply escalated, deterrent parking fees can be implemented.
- From an urban development perspective, large cities **should reorient their investments to prioritise public transport, favouring electric mobility**.
- The World Bank has said it is keen to enhance its **lending portfolio to tackle air pollution**, opening a new avenue for this.
- Governments should make the **use of personal vehicles in cities less attractive** through strict road pricing mechanisms.

5. WORLD BANK'S DOING BUSINESS 2019 SURVEY

Context:

- India's rank in the **World Bank's Ease of Doing Business 2019 survey** climbed 23 places to **77 among 190 countries surveyed**, making it the only country to rank among the top 10 improvers for the second consecutive year.
- Last year, India saw a record jump of 30 places to reach the **100th position** in the rankings.
- **New Zealand** topped the list of 190 countries in **ease of doing business**, followed by **Singapore, Denmark, and Hong Kong**.
- The **United States** is placed **eight** and **China** has been ranked **46th**. Neighbouring Pakistan is placed at 136.

Areas where Ease of Doing Business Concentrate:

- **Ease of doing business:** Harmonization of laws, procedures and rates of tax, will improve environment of compliance as all returns to be filed online, input credits to be verified online reducing need to deal with different tax authorities. It would also discourage mere 'invoice shopping'.
- This is a **dynamic process** and it reflects performance in various parameters for doing business in comparison to other countries.
- The sharp rise in the ranking will burnish the **reformist credentials** of the present government.
 - Number of days taken to **Start a Business** dropped from 30 to 16.
 - Number of days taken to **obtain Construction Permits** dropped from 144 to 95.
 - Border **compliance for exports** dropped from 106 to 66 hours.
 - Border **compliance for imports** dropped from 264 hours to 96 hours.
 - In the **electricity sector**, the time taken for obtaining a new connection has reduced from 105 to 55 days.
- Further, India now ranks in the **top 25 in the world** on three indicators–
 - Getting electricity,
 - Getting credit and protecting minority investors,
 - Department of industrial policy and promotion.
- In dealing with **construction permits**, India has implemented an **online single window system**, introduced deemed approvals and reduced the cost for obtaining these permits.
- For resolving insolvency, India has put in place a **new Insolvency and Bankruptcy Code** and **time bound reorganization procedure for corporate debtors**.

PARAMETERS	2017 RANKING	2018 RANKING
STARTING A BUSINESS	156	137
DEALING WITH CONSTRUCTION PERMITS	181	52
GETTING ELECTRICITY	29	24
GETTING CREDIT	29	22
TRADING ACROSS BORDERS	146	80
ENFORCING CONTRACTS	164	163
OVERALL RANKING	100	77

#EaseOfDoingBusiness ET NOW

What will be the outcome of this Ease of Doing Business Index report?

- It is significant for countries like India, where **foreign investors** and Governments look at the **investor friendly measures** and this index is considered to be the one which reflects the ground reality.
- In today's capitalistic society (market economy with safeguards for vulnerable sections), this assumes **significance as FDI flows** are considered necessary for growth of emerging economies.
- **Multilateral lending institutions** like World Bank, IMF look at these parameters and suggest measures for improvement before giving financial help to the emerging economies/under developed countries.
- **Simplifying FDI process by abolishing FIPB** (Foreign Investment Promotion Board) as a result, more than 90% of FDI inflows are now through automatic route.



However, the report does **not truly represent the status of economic reforms taken by India**. For instance:

- One particular **change in the ranking methodology** seems to have done considerable damage to India's improvement prospects.
- India ranks fourth from the bottom under the header "paying taxes". Inclusion of **new criterion 'post-filing index'** has much to contribute to this.
- The rankings cover **only the two cities of Delhi and Mumbai**. However, the reforms are being carried on all across India. In fact, states like Andhra Pradesh, Telangana have done remarkable efforts in economic reforms.
- There is **increasing competition from other countries** who are trying to improve their rankings as well.
- India has recommended the World Bank that reforms undertaken in the **entire country** and not just in Delhi and Mumbai be considered for the "Ease of Doing Business" Index.

Conclusion:

- India saw a similar improvement in the "**trading across borders**" section to **80th position from 146th a year ago**.
- **Other Initiatives** like digitization, e-visas, infrastructure status to Logistics, Start-up India, announcement of National Intellectual Property Rights (IPR) policy.
- This improvement was made possible by:
 - Reducing the **time and cost to export and import** through various initiatives, including the implementation of electronic sealing of containers,
 - Upgrading of **port infrastructure** and allowing electronic submission of supporting documents with **digital signatures** under its **National Trade Facilitation Action Plan 2017-2020**.

India is the one of only nine countries around the world and **only one in BRICS** to feature in this list.

Way Ahead:

- ✓ While **vigilance is the call of the hour**, we should also recognize that a improved in ranking is not an end in and of itself.
- ✓ For attracting new investment, both foreign and domestic, several **macroeconomic issues** have to be addressed.
- ✓ These include **political and economic stability, law and order maintenance, quality physical infrastructure, and buoyancy in financial markets**.
- ✓ Major **institutional and governance reforms** not covered in the World Bank study remain prerequisites for new businesses to start and grow.
- ✓ India may have the advantage of a large domestic market, and our efforts to improve our ease of doing business rankings may be finally yielding results, but there is **still a lot of work ahead**.

6. CHALLENGE TO THE RESERVE BANK OF INDIA'S RESERVE(S)

Context:

- The Centre is anxiously about on the **surplus reserves of RBI** in which the central bank necessitates as an **emergency buffer** not meant to be shared.
- But the Reserve Bank of India is **staunchly resisting** the government's demand to **transfer a part of its**

Components of a Bank Balance sheet

Liabilities	Assets
1. Capital	1. Cash & Balances with RBI
2. Reserve & Surplus	2. Bal. With Banks & Money at Call and Short Notices
3. Deposits	3. Investments
4. Borrowings	4. Advances
5. Other Liabilities & provisions	5. Fixed Assets
	6. Other Assets

reserves as surplus, the central bank sees no problem with paying interim dividend from its operations.

Income Sources and Expenditure of RBI:

- A Central Bank is primarily meant to promote the **financial and economic stability** of the country.
- The Central Bank of a country promotes **economic growth** and **stability** and **controls inflation**.

- The majority of the income comes from:
 - The returns it earns on its foreign currency assets, which are either in the **form of bonds and treasury bills** of other Central Banks like Federal Reserve of USA.
 - It also earns money through **Open Market Operations**, which it undertakes regularly to **manage liquidity**.
 - The RBI can also **invest in top-rated securities** across the World.
 - It also earns money by lending to banks for very short tenures, such as **overnight repo**.
 - RBI has also been **more active in the forward currency markets** and it also earns income this way also.
- It also claims a **Management Commission** on handling the borrowings of State Governments and the Central Government.

Expenditures of RBI:

- The main Expenditure of RBI is **Printing of currency notes**. (Recently Demonetisation made to printing of new currency)
- It gives commission to the banks for the **operation of accounts** of State Govts and Central Govt. by various commercial banks on its behalf.
- Interest to be paid, when it undertakes **reverse repo operations**.

RBIs and Centre Arguments raised as a bone of contention:

- The **Foreign Exchange Reserves** are around **\$ 390 bn** and majority of them are in foreign currency assets.
- While the RBI is opposed to the transfer of its **reserves as surplus**, it may end up paying an **interim dividend** to help the Centre meet its **fiscal deficit target** for 2018-19 (Apr-Mar), like it did last year.
- The **financial year** for the **government** runs from **April to March**, while the **RBI** follows a **Jul-Jun year**. This implies that by the time the central bank closes its book and transfers its surplus, typically in August, the financial year for the government is already over.
- In March, the central bank paid 100 bn rupees to the government as interim dividend for 2017-18 (Jul-Jun), as part of the 500-bn-rupee surplus transfer for the year.
- The Union Budget for 2018-19 had pegged the **government's fiscal deficit at 3.3% of GDP**, a number that seems **increasingly challenging** because of a surge in crude oil prices, and a possible shortfall in collections under goods and services tax.
- It, therefore, seems that the Centre may have to rely on the RBI once again to tide over its finances.
- The Budget also estimated total dividend from RBI and public sector banks in the current financial year at **548.17 bn rupees**.

Aim of keeping reserves by RBI: what's the objective of these reserves ?

- The **CGRA (currency and gold revaluation account)** is meant to cover a situation where the **rupee appreciates** against one or more of the currencies in the basket.
- The basket has several currencies ranging from the dollar to the euro and the yen or if there is a decline in the rupee value of gold.
- The **level of CGRA** now covers about a **quarter of the total currency reserves** of the RBI.
- The CGRA, which serves as a **risk management technique for the RBI**, has shown large variations over the years due to revaluation of foreign exchange assets.
- The **contingency reserve** is meant **to cover depreciation** in the value of the RBI's holdings of government bonds— domestic and foreign— if yields rise and their prices fall.
- The reserve is also meant to cover expenses from **extraordinary events** such as demonetisation, money market operations and currency printing expenses in a year of insufficient income.
- Most important of all, the **contingency reserve supports the mother of all guarantees** the central bank's role as the **lender of the last resort**.
- The reserve is also a cover for the **deposit insurance fund** given that the **Deposit Insurance and the Credit Guarantee Corporation (DICGC) is a wholly-owned subsidiary of the RBI**.

Conclusion:

- The money supply has an important bearing on the **functioning of the economy**.
- The **management of the money supply and credit control** is an important function of the Reserve Bank of India.

- As India has grown at a **rapid pace** in the past and is expected to **maintain this growth chart** in the coming couple of decades, foreign investors have been pouring money here to reap the benefits of this growth and that is how India has enjoyed a major uptick in its **foreign exchange reserves**.
- To maintain the **value of rupee** and thereby our **forex reserves**, India is required to become **innovative, competitive and efficient**.
- It is required to win **foreign investors trust** and thereby become a **reliable partner in its future growth**.
- The central bank has still been able to navigate India properly, especially now when our foreign exchange is at an all-time high of **over 390 bn \$** and inflation coming under control.
- Therefore, The Committee should be set up with **representatives** from Government, the Central Bank, academicians and the market.
- The Committee should go into **all the aspects of RBI's balance sheet**, suggest a **safe buffer in reserves** and **fair method of sharing the reserves**.

7. PRESERVING THE TABOO: ON NUCLEAR ARMS CONTROL

Context of Intermediate-Range Nuclear Forces (INF) Treaty:

- U.S. President Donald Trump declared that the U.S. is **quitting the Intermediate-Range Nuclear Forces (INF) Treaty**, a bilateral agreement **with Russia** signed in 1987.
- The decision was not unexpected since the U.S. has long maintained that Russia has been violating the treaty and Mr. Trump has been critical of **arms control agreements** because, according to him, other countries cheat putting the U.S. at a disadvantage.

Intermediate-Range Nuclear Forces Treaty:

- The **Intermediate-Range Nuclear Forces Treaty** (INF Treaty, formally Treaty Between the **United States of America** and the **Union of Soviet Socialist Republics** on the Elimination of Their Intermediate-Range and Shorter-Range Missiles) is a 1987 arms control agreement between the United States and the Soviet Union.
- Under the **INF Treaty**, the **U.S. and the U.S.S.R.** agreed to **eliminate** within three years all ground-launched-missiles of **500-5,500 km range** and not to develop, produce or deploy these in future.
- The U.S. destroyed 846 Pershing IIs and Ground Launched Cruise Missiles (GLCMs) and the U.S.S.R., 1,846 missiles (SS-4s, SS-5s and SS-20s), along with its support facilities.

Importance of the Intermediate Nuclear Forces (INF) Treaty in U.S.-Russia relations:

- Under the Treaty, the two parties agreed that a whole important class of nuclear weapons would be removed from Europe, and **only tactical nuclear weapons** (TNW) or short-range missiles mostly deployed on the territory of Germany would remain.
- The INF Treaty for years served to mitigate fears of both parties in relation to possibility of military escalation, operational miscalculation, and helping to shift the **logic of MAD** [mutually assured destruction] to the **higher "more sensitive" political level**.

Adverse consequence of the present decision by Mr. Trump:

- Mr. Trump's decision has **generated dismay and concern** that this will trigger a **new nuclear arms race in Europe** and elsewhere.
- What it ignores is that the **INF Treaty reflected the political reality of the Cold War** of a bi-polar world with **two nuclear superpowers** no longer consistent with today's **multi-polar nuclear world**.
- The **greater challenge** today is to understand that **existing nuclear arms control instruments** can only be preserved if these evolve to take **new realities** into account.

Intermediate-Range Nuclear Force Treaty (INF Treaty)

- Agreement between the United States and the Soviet Union in 1987.
- Elimination of Their Intermediate-Range (between 500 and 5,500 km) and Shorter-Range Missiles.
- A total of 2,692 missiles (846 by U.S. and 1,846 by Soviet Union) were eliminated by mid-1991. In 2007, Russia withdrew from the treaty.

What is the impact of U.S. withdrawal from the INF Treaty on China ?

- Intermediate-range missile systems and cruise missiles would considerably enrich U.S. capabilities in a potential clash over Taiwan or other contentious **strategic issue**.
- As the PLA of China has a **variety of cruise missiles** that can be launched from **land, air, sea, and sub-surface platforms**, returning to intermediate-range systems would equip American forces with the capability to strike targets that are highly difficult to penetrate for conventional weapons at present.
- Meanwhile, vectoral enhancement of political relations with states all over the world, particularly those that are **economically and politically affiliated to China**, with possible shows of economic might and deeper engagement on the field of security.
- All this will serve as a catalyst of economic allegiance and a probe of America's security creed, especially in the region of the Pacific and Asia.
- Nevertheless, joining the arms race in Asia may lead China into a **trap of "competitive strategy."**

Foreign and Security policy consequences for U.S. nuclear deterrence in the absence of the INF treaty:

- Leaving the INF Treaty would allow the U.S. to balance the **military technology gap with these assets**, which has grown since 1980, especially between U.S. and China.
- In harmony with the Limited Test Ban Treaty of the 1960s, SALT [Strategic Arms Limitation Treaty] and START [Strategic Arms Reduction Treaty], the INF has had a codifying effect on the two superpowers' strategic relations.
- Washington's leaving the ABM [Anti-Ballistic Missile] and INF Treaty creates a formal agreement to **vertical proliferation of WMD** and gives higher status to the **concept of power in international politics**.

Conclusion:

- In today's return of major power rivalry, it is **no longer a bi-polar world**, and nuclear arms control is no longer governed by a single binary equation.
- There are **multiple nuclear equations** — U.S.-Russia, U.S.-China, U.S.-North Korea, India-Pakistan, India-China, but none is standalone.
- Therefore, neither **nuclear stability nor strategic stability** in today's world can be ensured by the U.S. and Russia alone and this requires us to think afresh.
- The **most important achievement** of nuclear arms control is that the **taboo against use of nuclear weapons** has held since 1945.
- Preserving the taboo is critical but this **needs realisation** that existing nuclear arms control has to be brought into line with today's political realities.

8. POLITICAL ECONOMICS: CREDIT STIMULUS FOR MSMES**Introduction:**

- The Centre has announced an important **credit stimulus package for micro, small, and medium enterprises (MSMEs)**.
- Among the many sops doled out under the new scheme, Prime Minister Narendra Modi has promised the sanction of **business loans of up to ₹1 crore** within a **time frame of 59 minutes**, in order to encourage **faster credit flow to MSMEs**.
- These companies will also receive an **interest subvention of 2%** under the scheme and support from public sector units, which will now be mandated to make at least 25% of their overall purchases from MSMEs.
- It is worth noting that **MSMEs**, which account for 30% of India's gross domestic product (GDP), were hit hard by the **twin shocks** of **demonetisation** and the implementation of the **Goods and Services Tax** over the last couple of years.

About the MSME sector:

- The Indian MSME sector provides **maximum opportunities** for both self-employment and wage employment outside the agricultural sector
- The sector generates around **100 million jobs through over 46 million units** situated throughout the geographical expanse of the country

- With **28-30 per cent contribution** to the nation's **Gross Domestic Product (GDP)** and **40-45 per cent share** of the overall **exports and manufacturing output** respectively, the sector plays a key role in our economy
- Besides the wide range of services provided by the sector, it is engaged in the manufacturing of over 6000 products ranging from traditional to hi-tech items

12 Key Initiatives:

- As part of the programme, prime minister unveiled **12 key initiatives** which will help the **growth, expansion, and facilitation of MSMEs** across the country.
- Modi announced **59-minute loan sanctions**, relaxation in labour laws, easier compliance with environmental rules and changes in company laws for small and medium enterprises to give a boost to the nation's second-biggest employment sector.
- **Five key aspects of facilitating the MSME sector:**
 - Access to credit
 - Access to market
 - Technology upgradation
 - Ease of doing business
 - A sense of security for employees

12 historic decisions by PM Modi for the MSME Sector

Loan in 59 minutes.	Interest benefits for GST registered MSMEs.	CPSEs and Corporates more than Rs. 500 crore to join Trade Receivables e-Discounting System or the TReDS Platform.
Tech support to MSMEs via 20 hubs and 100 Spokes.	Mandatory 25% procurement from MSMEs by CPSEs.	Now, returns due to 8 Labour Laws and 10 rules to be filed only once instead of the earlier twice.
Pharma Clusters where 70% cost borne by Centre.	All CPSEs to join Government e-Marketplace (GeM).	Of the 25% mandatory procurement, 3% to be done only from women-led MSMEs.
Ending Inspector Raj and ensuring transparency.	Ordinance for simplifying levy of penalties for minor offences.	Easier process for Environmental Clearances and 'Consent to Establish.'

Access to Credit:

- Prime Minister announced the launch of the **59 minute loan portal** to enable easy **access to credit for MSMEs**. That loans up to Rs. 1 crore can be granted in-principle approval through this portal, in just 59 minutes. The Prime Minister asserted that in New India, no one should be compelled to visit a bank branch repeatedly.
- The Prime Minister mentioned the second announcement as a **2 percent interest subvention for all GST registered MSMEs, on fresh or incremental loans**.
- For exporters who receive loans in the pre-shipment and post-shipment period, the Prime Minister announced an increase in interest rebate from 3 percent to 5 percent.
- The third announcement made by the Prime Minister was that all companies with a **turnover more than Rs. 500 crore**, must **now compulsorily** be brought on the **Trade Receivables e-Discounting System (TReDS)**.
- Joining this portal will **enable entrepreneurs to access credit** from banks, based on their upcoming receivables. This will resolve their problems of cash cycle.

Access to Markets:

- The Prime Minister said that on access to markets for entrepreneurs, the Union Government has taken a number of steps. Fourth announcement, that public sector companies have now been asked to **compulsorily procure 25 percent, instead of 20 percent of their total purchases, from MSMEs**.
- The Prime Minister said his fifth announcement is related to **women entrepreneurs**. Out of the **25 percent** procurement mandated from MSMEs, **3 percent must now be reserved for women entrepreneurs**.
- The Prime Minister said that more than **1.5 lakh suppliers** have now registered with GeM, out of which **40,000 are MSMEs**.

- The sixth announcement is that all public sector undertakings of the Union Government must **now compulsorily be a part of GeM.** He said they should also get all their vendors registered on GeM.

Technology Upgradation:

- Coming to **technological upgradation**, the **tool rooms** across the country are a **vital part of product design.** His seventh announcement was that **20 hubs** will be formed across the country, and **100 spokes in the form of tool rooms** will be established.

Ease of Doing Business:

- On Ease of Doing Business, the Prime Minister said his eighth announcement is related to **pharma companies**. Clusters will be formed of **pharma MSMEs**. He said **70 percent cost** of establishing these clusters will be borne by the Union Government.
- The Prime Minister said that the ninth announcement is **on simplification of government procedures.** He said the ninth announcement is that the return under 8 labour laws and 10 Union regulations must now be filed only once a year.
- The Prime Minister said that the tenth announcement is that now the establishments to be **visited by an Inspector** will be decided through a **computerised random allotment.**
- The Prime Minister noted that as part of establishing a unit, an **entrepreneur needs two clearances** namely, **environmental clearance** and **consent to establish.**
- The eleventh announcement is that under **air pollution** and **water pollution laws**, now both these have been merged as a **single consent**. That the return will be accepted through **self-certification**.
- As the twelfth announcement, the Prime Minister mentioned that an **Ordinance** has been brought, under which, for **minor violations under the Companies Act**, the entrepreneur will **no longer have to approach the Courts,** but can correct them through simple procedures.

Social Security for MSME Sector Employees:

- The Prime Minister also spoke of **social security for the MSME sector employees.** He said that a mission will be launched to ensure that they have Jan Dhan Accounts, provident fund and insurance.
- The Prime Minister said that these decisions would go a **long way in strengthening the MSME sector in India.** He said the implementation of this outreach programme will be **intensively monitored over the next 100 days.**

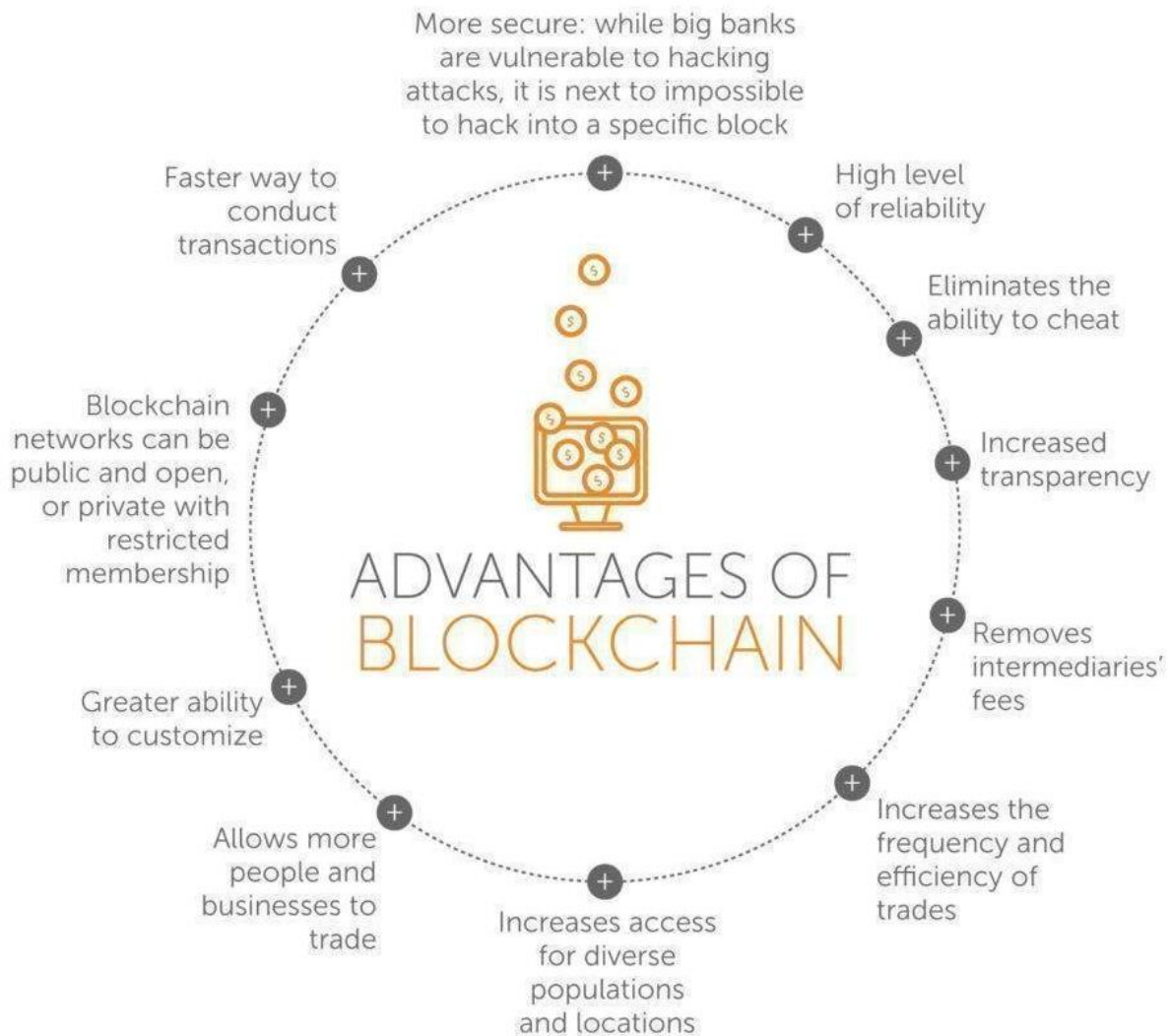
Conclusion:

- Conceptually, the Prime Minister's latest credit scheme is no different from the **MUDRA loan scheme**, which has been troubled by **soaring bad loans**.
- Also, the demand that PSUs must procure a quarter of their inputs from MSMEs could breed **further inefficiency** in the economy.
- In September, former RBI Governor Raghuram Rajan had warned that loans extended under the MUDRA scheme could **turn out to be the source** of the **next financial crisis**.
- Care needs to be taken to see that the **new MSME loan scheme** does not pose a similar risk in the future.

9. THE IMPORTANCE OF BLOCKCHAIN FOR INDIA

Introduction: what blockchain is?

- Blockchain is a **public ledger, an ordered and time-stamped record of transactions.**
- This system is used to protect against double spending and modification of previous transaction records where transactions are recorded and confirmed anonymously.
- In common words, it's a record of events that is shared among many parties (nodes). More importantly, **once information is entered, it cannot be altered.** Each full node in the network independently stores a block chain containing only blocks validated by that node.
- When several nodes all have the same blocks in their block chain, they are considered to be in consensus. The validation rules **these nodes follow to maintain consensus** are called **"consensus rules."**



Blockchain transforms Internet of Information to Internet of Value:

- Blockchain is the promise of **completely new Internet, the Internet of Value**. Blockchain's economic impact is projected to **exceed \$3 trillion** in the next decade.
- Internet is going to transform from Internet of Information to **Internet of Value**.
- The ownership of digital assets of any type, say money, deeds, Government records, financial instruments or art can be securely stored, transacted and tracked.
- It is considered **revolutionary for its ability** to enable the secure movement of assets without intermediaries. The true value lies in **creating consensus and trust** between the strangers.
- That creates **trusted transaction networks** between entities that do not know or trust each other.

India's Position in Blockchain Technology:

- Globally, we are still in an exciting but **nascent stage of blockchain's evolution** as it moves from the protocol stage to infrastructure, before mass consumer interfaces and application layers.
- This is the perfect juncture for a **rising power** such as India to pay careful attention and capitalize on the enormous opportunities of this new Internet.
- **Sectors** such as financial services, agriculture, healthcare, real estate and utilities all crucial for an emerging economy like India can see tremendous benefits from the application of blockchain technology.
- **Gains for India:** Blockchain is now the fastest-growing skill set demanded on job sites, with **job growth rates at 2,000-6,000%** and **salaries for blockchain developers 50-100% higher** than regular developer jobs.
- The **decentralized nature of projects** with distributed teams can translate into lakhs of high-paying jobs from all over the world being available to Indian developers.
- With its **strong IT ecosystem**, India can become a leading blockchain development hub and a major net beneficiary of global capital inflows.

- **Solving Indian problems: Decentralized applications** on public blockchains can solve myriad Indian problems, such as eliminating middlemen, providing data security, reducing corruption and tampering of financial ledgers, and improving the speed of service delivery by governments and corporations.
- **India's global positioning as a technology powerhouse:** Different emerging technologies, such as blockchain, artificial intelligence, and the internet of things will not work in silos but will converge. That is the space where the next Googles and Amazons of the world will get created.
- Blockchain is a **foundational data/transaction layer** and missing out on it will hurt India's overall tech competitiveness.
- **Regulation in India:** The current debate in India has, unfortunately, focused too heavily on trading and speculation, looking at cryptocurrencies as an investment tool, rather than understanding the **potential of core blockchain technology** and the **basic role of cryptocurrencies** as an incentive mechanism **to secure decentralized transactions.**
- There are sufficient global examples of countries that have taken nuanced and cautious steps in regulating the technology, and are **focusing on stopping illegal activity without hurting innovation.**
- As core developers/shapers of this technology in India, all citizens should fully **cognizant and sympathetic** to government concerns of **money laundering, tax evasion, investor protection and capital flight.**

Conclusion:

- Public blockchains offer **tremendous opportunity for India across four dimensions, jobs, capital, solutions to India's problems and global strategic positioning.**
- Blockchain is a **digital technology for recording and verifying transactions.**
- The distributed ledger is a **permanent, secure tool** that makes it easier to create cost-efficient business networks without requiring a centralized point of control.
- The application of this emerging technology is showing great promise in the enterprise.
- With the noble intentions of Start-up India and Digital India, blockchain technology can be an **effective way to achieve the goals** of the initiatives and **ease the business in India.**
- Blockchain technology has been proven and provides all the **required security features to implement the solution quickly.**

Way Forward:

- In the current regulatory environment, Indian developers do not have to ability to develop open blockchain solutions at scale.
- Serious blockchain professionals are migrating rapidly to countries with more friendly regulations.
- As a result, **India's ability to benefit** from jobs, capital, local innovation and positioning is all curtailed without the talent ecosystem in place.
- The government has **legitimate concerns** around money laundering, tax evasion and capital flight using cryptocurrencies. However, regulating the space is not too difficult with a **light touch and intelligent policies.**

10. INDEPENDENCE AND ACCOUNTABILITY: ON RBI

Introduction:

- The Reserve Bank of India (RBI) and the government give the impression that they are not on the same page even as far as an understanding of **their roles is concerned.**
- The RBI suggests that **its independence is being violated** while the government **rationalises its intervention** in terms of its **concern for the economy.**

Defining autonomy From the Side of Central bank or from the Government:

- The idea of central bank independence began to germinate some two decades ago, this was understood to mean a **'functional' independence.**

- That is, the bank would be **unconstrained by the government** in its functioning, which includes both the instruments it uses and how it uses them.
- However, its autonomy was not to extend **to 'goal' independence**. What the goals of the central bank should be were to be **chosen by the government without reference to the bank**.
- The **main issue** here was whether the bank should **focus on inflation alone or also on the level of employment**.
- Within a decade of this debate, it had been conceded that the focus would be exclusively on the former, and **monetary policy came to be identified with 'inflation targeting'**.

Where Does RBI Stand in Terms of Autonomy?




- According to a paper published in the **International Journal of Central Banking** in 2014, RBI was listed as the **least independent** among 89 central banks considered under the study.
- These rankings are likely to have improved since the adoption of inflation targeting in February 2015 and formation of **Monetary policy committee** in October 2016.
- However, **vacancies** in RBI's board and government's reluctance to fill them up raises questions about the decisions taken and whether proper deliberations on those decisions are being held.
- During the previous government, a **Financial Sector Legislative Reforms Commission** was formed which made various recommendations to **cut down RBI's powers**.
- In 2013, a financial sector monitoring body, called **Financial Stability Development Council** was established which was to be **chaired by the Finance Minister**.
- In essence, the RBI Act 1934, does **not empower RBI absolute autonomy**. However, it does enjoy some independence when it comes to performing its regulatory and monetary functions

What is the RBI aggrieved about?

- One, the Reserve Bank of India wants **more powers over regulating public sector banks (PSBs)**.
- Two, it feels that the government should **not dictate the quantum of its surplus** that can be paid as annual dividend.
- And three, it is miffed that the Centre has **suggested a separate payments regulator**.

WHAT'S THE FIGHT ABOUT?

From more powers to the central bank to bad loans, the RBI and the government are locking horns over several issues

RESERVE BANK OF INDIA		GOVERNMENT OF INDIA
Says they have 'inadequate control' over public sector banks, including no power to remove the chairmen, directors or CEOs of state-owned banks	Power tussle 	The finance ministry has listed in Parliament the powers the RBI enjoys under the Banking Regulation Act. The ministry says the powers are wide ranging and comprehensive to deal with various situations
The RBI's February 2018 circular did away with traditional restructuring schemes and put in a default rule under which banks must treat a company as a defaulter even if it misses repayment by a single day	Bad loans 	The government is opposed to the rule, arguing it could render many companies as defaulters and hurt entrepreneurship. The government could also invoke an unused provision in the RBI Act to dilute the circular for the power sector
The RBI paid the government a dividend of Rs 30,659 crore in FY2016-17, less than half of what it did in FY2015-16	Dividends 	The government wants the RBI to consider framing a policy that will mandate it to transfer a certain percentage of the dividend to the government

- RBI Governor Urjit Patel told a **parliamentary panel** in June that it does not have **enough powers over PSBs**. But the RBI does have **nominee directors on bank boards**.
- It leads **physical inspection** at banks and financial audits. It has also orchestrated mergers between banks whenever a bank has been on the verge of collapse (for instance, Global Trust Bank merged with Oriental Bank of Commerce).
- So, the RBI does have **adequate control over PSBs** but may not be exercising it fully.

Way Forward:

- The government's concern for the health of the **medium and small enterprises** is well-founded.
- After all, they were among the most affected sections following the demonetisation of 2016.
- If, in the spirit of contriteness as it were, the government wants to reach out to them, the right course would be to provide **interest rate subvention**, rather than **to force the RBI to tweak its lending norms**.
- There is a **severe lack of judgment** in loan melas promising online sanction in less than an hour. There is the suggestion in this of the **political business cycle**, a government trying to **nudge the economy** prior to an election.
- The resistance of the RBI to this desperate action should be understandable.

Conclusion:

- **Monopoly of interpretation** and **choice of instruments of intervention** would always, in an uncertain economy, continue to be a matter of debate.
- 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.
- Different countries have taken different routes and by and large each model is appropriately tuned to their specific contexts.
- The oft-quoted **US example is a good model** to work upon.
- Presentation by the chairman of the Federal Reserve to the Congress makes for **public exposure** and **transparency** but does **not take away the chairman's autonomy**.
- We need an **appropriate and structured forum** to strike a balance between **unrestrained autonomy and blatant political intervention**.

11. PROTECT THE LITTLE HELPERS

Introduction:

- If you look at the plate of food on your dinner table, **bees have played their part** either pollinating the many vegetables and fruits we eat directly, or pollinating the food for the animals that we then consume.
- And that's not all bees do for us – **honey and wax** are two other important products that come courtesy of bees.
- But honey bees are disappearing globally at an **alarming rate due to pesticides, parasites, disease and habitat loss**. If these little insects that help provide so much of the food we eat were to vanish, what would we do without them?

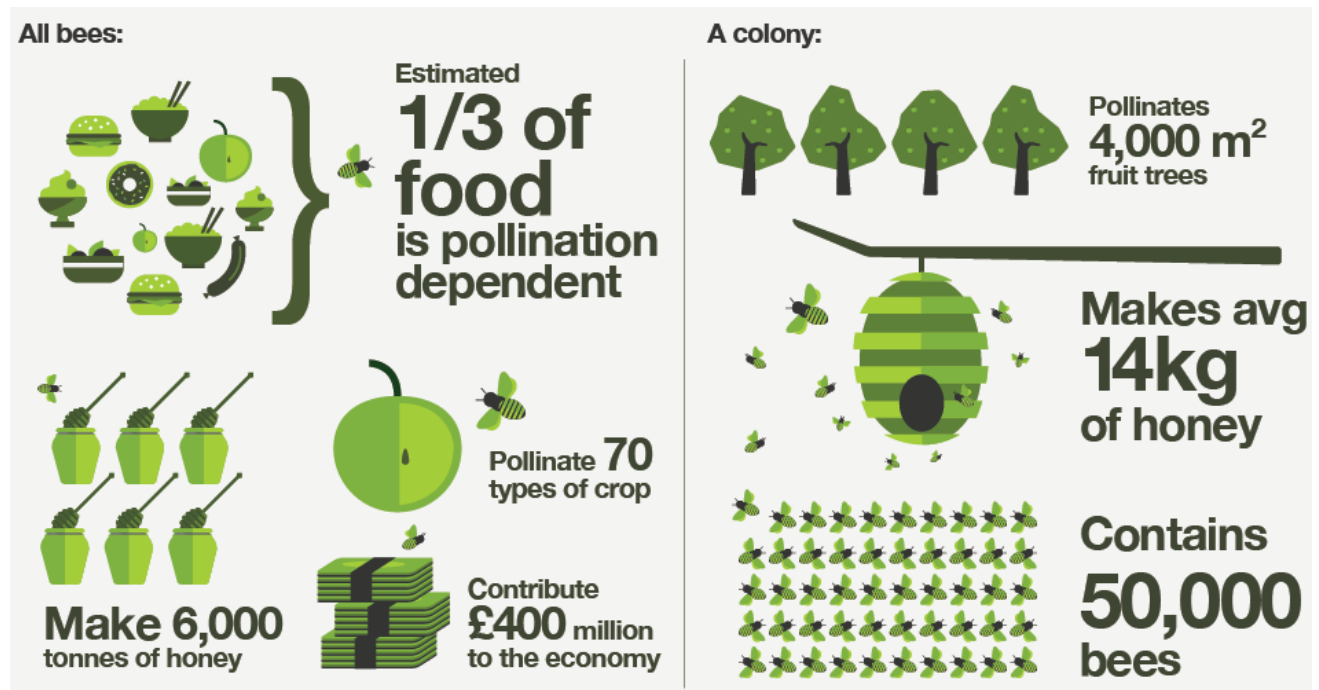
Pollination and food production:

- Pollination is the **vital process in flowering plant reproduction** involving the transfer of pollen grains from the anther (or male part) to the stigma (or female part) of the same, or another plant of the same species. The fertilised egg cells grow into seeds which are then spread in the many fruits and vegetables that we all love to eat.
- Pollination is not just important for the food we eat directly, **it's vital for the foraging crops**, such as field beans and clover, used to feed the livestock we depend on for meat.
- Just as importantly, it helps to **feed many other animals in the food chain** and maintains the **genetic diversity** of the flowering plants.

Importance of Pollinators:

- Most of our **staple food crops** such as wheat, rice, sorghum, barley and maize do not require animals for their pollination.

- However, **wild pollinators** play a very important role in the production of other crops such as some pulses, sunflower seeds, cardamom, coffee, cashew nuts, oranges, mangoes and apples.
- In India, the **important pollinators of food crops** are various species of honeybee, Apis, such as A. Dorsata, A. Cerana, A. Florae, A. Andreniformes and A. Laboriosa. The European honeybee, A. Mellifera, also pollinates many crops and fruits such as apples.
- An army of **more than 20,000 species of pollinators** including birds, bats and insects service these crops.
- For most of our food crops, though, the most important pollinators are the **thousands of species of bees**. The annual economic value of the crops pollinated by animals worldwide is estimated to be **between \$260 billion and \$620 billion (in 2018)**.



Pollinators are under grave threat:

The decline of moths, bees, butterflies, hoverflies and other pollinators is **undeniably linked to human activity**:

- Large tracts of natural habitats have been cleared for monoculture cultivation
- while the use of pesticides and fertilisers is pushing out nature's little helpers.
- In a series of studies at the **University of Calcutta**, researchers have showed that **native Indian bees**, when exposed to **multiple pesticides**, suffer from **memory and olfactory (incapable of smell) impairment**, lower response rates, and oxidative stress which damages cells.
- Parthiba Basu and his team estimated that **between 1964 and 2008**, there was a **40-60% growth** in relative yields of pollinator-dependent crops, while pollinator-independent crops such as cereals and potatoes saw a corresponding 140% rise in yields.
- In Kashmir, researchers have pinned **lowering yields of apple trees** on the declining frequency of bee visits. **In north India**, lowering yields of **mustard cultivation** may be caused by disappearing pollinators.

International Initiatives:

- By 2014-15, the U.S. had established a **Pollinator Health Task Force** and a **national strategy** that focussed on **increasing the monarch butterfly** population and planting native species and flowers in more than 28,000 sq km to attract pollinators.
- Around the same time, the U.K. developed **23 key policy actions** under its **National Pollinator Strategy**. Meanwhile, after the IPBES report, almost 20 countries have joined the **Coalition of the Willing on Pollinators**.

Way Forward: Pollinators are the Friends of the Nature:

- The **EU Pollinators' Initiative** adopted recently can provide pointers to India, particularly a **policy of direct payment support to farmers** to provide buffer strips for pollinators for nectar- and pollen-rich plants.
- India has millions of hectares of reserve forests, some of which have been converted to **pulpwood plantations**. Much of this can be restored to become **thriving homes for pollinators**. The same can be

done in **gram panchayat levels**. Fallow areas and government land can be used to plant **flowering species for pollinators**.

To restore the integrity of pollinators:

- Improvements in the **science of pollination**, better land management, strong regulations underlying pesticide use, and restoration and protection of habitats for wild pollinators.
- Above all, there is an **urgent need for monitoring wild pollinators**, and for strengthening the **governance of natural assets**.

Conclusion:

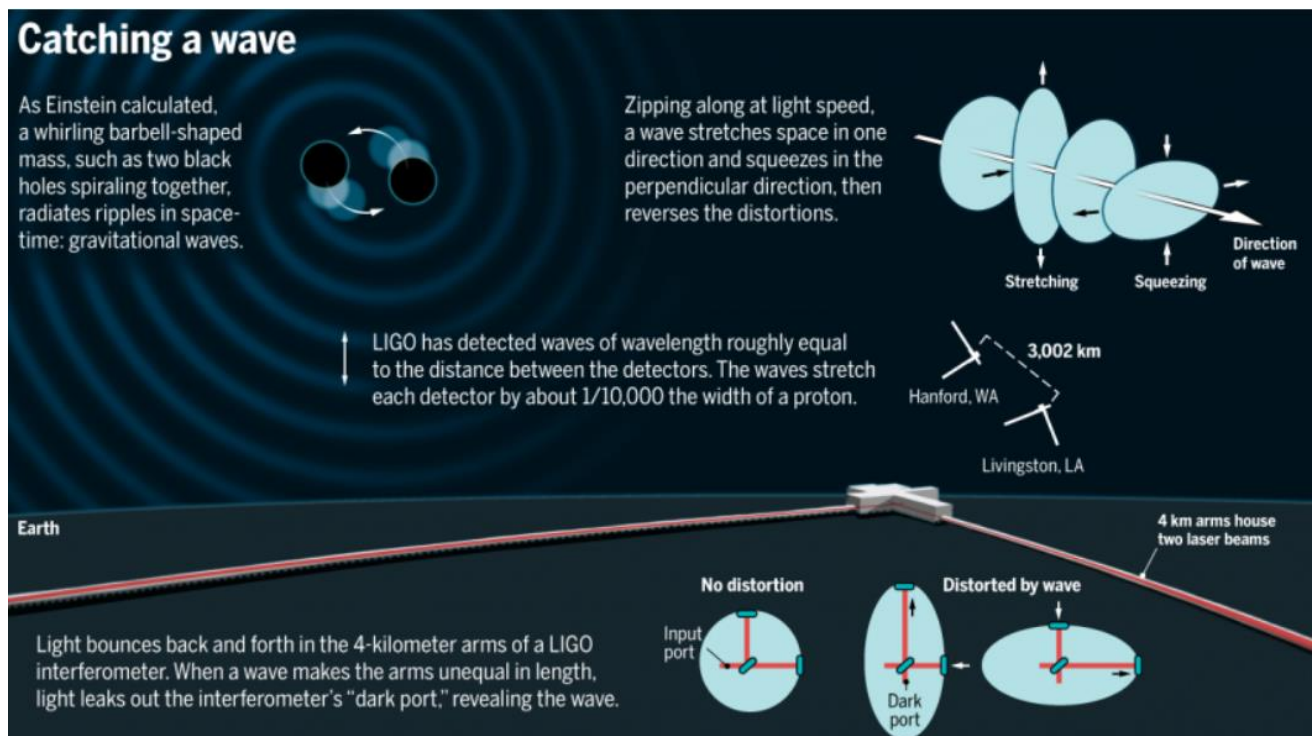
- Pollinators in urban areas can service and enhance food production in peri-urban areas. Wild biodiversity, including pollinators, must become a **significant component of future 'smart cities'**.
- **Policies and governance for managing landscapes** natural, agricultural, urban are equally important.
- There are many factors involved in the **complex environmental challenges threatening human security today**. Only **well-integrated approaches** can successfully address them.
- **Promoting organic farming** and **lowering pesticide usage**, **landscape management** is key.

12. RIPPLES OF DISCORD: ON GRAVITATIONAL WAVES

Introduction:

What are Gravitational Waves?

- “These are **ripples in the fabric of space-time** that are produced, when black holes collide and stars explode”, gravitational waves are **produced when objects accelerate**.
- Gravitational waves were first proposed, 100 years ago by **Albert Einstein**, as part of the **Theory of Relativity**.
- The discovery can pave the way for proving the **general theory of relativity**, so that we can look deeper and deeper into the universe. It also throws up the possibility of detectors that can look **at the beginning of the universe**.



How this Gravitational Waves have been Identified?

- On February 11th, 2016, scientists at the **Laser Interferometer Gravitational-wave Observatory (LIGO)** made history when they announced the first detection of gravitational waves.
- The **2017 Nobel Physics Prize** was awarded “for **decisive contributions** to the LIGO detector and the observation of **gravitational waves**”.

- The waves detected by the laureates came from the **collision of two black holes** some **1.3 billion light years away**. A light year is about 9.5 trillion km.
- LIGO's feat was among the most electrifying announcements in recent years.
- As per **the Theory of General Relativity**, the **pair of black holes** orbiting around each other lost energy, through the **emission of gravitational waves**.
- **Black Holes are region of space-time**. It exhibits **strong gravitational effects**, due to which, particles and electromagnetic radiation cannot escape from it.
- It acts like an **ideal black body** reflecting no light. It continues to grow, by absorbing mass from its surroundings.

Why do gravitational waves matter to us?

- The discovery is due to an **extremely delicate experiment**. Gravitational waves were predicted by Einstein almost 100 years ago. After about 50 years of experimentation the waves were detected for the first time in September 2015.
- The **discovery and the repeated detection (four times now)** has made the possibility of **gravitational wave astronomy** very real.
- Gravitational wave astronomy is a way of mapping out some of the **most violent processes in the universe** such as black hole or neutron star mergers that cannot be detected with light or the conventional methods.
- Gravitational waves transport energy as **gravitational radiation**, a form of radiant energy similar to electromagnetic radiation.
- **Newton's law of universal gravitation**, part of classical mechanics, does not provide for their existence, since that law is predicated on the assumption that physical interactions propagate instantaneously (at infinite speed).
- Gravitational waves can penetrate regions of space that electromagnetic waves cannot. They are able to allow the observation of the **merger of black holes and possibly other exotic objects** in the distant Universe.

In 2017, some group of scientists questioned the validity:

- They argued that the two detectors belonging to LIGO were correlated and this led to a **correlation in the noise factor**. Weeding out noise from the signal is crucial in any such experiment.
- This had not been done properly in the LIGO Scientific Collaboration (LSC). Since then, a version of their pre-print has been published in the **Journal of Cosmology and Astroparticle Physics**.
- After a long silence, the LSC has put up a clarification on its Website.

Benefits for India by the LIGO-India project:

- The project will bring unprecedented opportunities for scientists and engineers to dig deeper into the **realm of gravitational wave** and **take global leadership** in this new astronomical frontier.
- The **LIGO-India project** will also bring considerable opportunities in cutting-edge technology for the Indian industry which will be engaged in the construction of the eight-km long beam tube at ultra-high vacuum on a levelled terrain.
- With its establishment, **India will join the global network of gravitational wave detectors**.
- Establishing an observatory in India also assumes importance because the further the distance between the observatories, the greater will be the accuracy in locating gravity waves.
- Adding a new detector to the existing network will increase the expected event rates, and will boost the detection **confidence of new sources and ability of localizing GW sources** in the sky will be enhanced. It will also have an aspirational value for young Indian Scientists.
- LIGO can act as platform to **unravel the mysteries of universe** and India's association with it is going to help us in the future.

Things predicted by General theory of relativity by Einstein include:

- As light gets closer to the sun, it bends towards the sun twice as much as classical physics (the system used before general relativity) predicts.
- **Redshift from gravity**: When light moves away from an object with gravity (moving away from the centre of the valley), it is stretched into longer wavelengths. This was confirmed by the **Pound-Rebka experiment**.

- **The Shapiro delay:** Light appears to slow down when it passes close to a massive object. This was first seen in the 1960s by space probes headed towards the planet Venus.
- **Gravitational waves:** They were first observed on 14 September 2015.

Way Forward in Gravitational Waves:

- This is how science makes progress in leaps and bounds, with **thoughtful critiques and interventions in between**.
- In this case, the attendant controversy captured the interest of even those beyond the **World of Science**. Now, the LSC plans to come out with a paper that carries detailed explanations.
- Initially, there is dis-agreement regarding the Einstein's theory of relativity. But now, a consortium of astronomers confirmed the prediction of Einstein's key theory of relativity.
- Einstein had posited that large gravitational forces could stretch light, much like the compression and stretching of sound waves we perceive with the change of pitch of a passing train.
- India is also working to have its **own detector** under the **consortium known as INDIGO**.
- However, the successful completion and discovery of Gravitational waves from **Indian consortium needs cooperation** from all across the world as it cannot be done by a single nation due to technical issues.
- There is need to build on this to provide more such opportunities to the **scientist community of India**.

13. NEW RIPPLES IN ANDAMAN SEA

Introduction:

- Prime Minister Narendra Modi's second visit to **Singapore** this year is nicely framed by the **largest ever naval exercise between the two nations** (India and Singapore) in the **Andaman Sea and the Bay of Bengal**.
- The **exercises, called the Simbex**, began 25 years ago as India embarked on the so-called **Look East Policy** that sought a **renewed economic, political and military engagement with South East Asia**.
- The two sides hope that these bilateral exercises will eventually involve the **participation of other South East Asian nations** and form the basis for a **cooperative security framework in the heart of the Indo-Pacific**.



Indo-Pacific Region:

- **Indo-Pacific** is also a **sum of its many sub-regions** that include the East China Sea, South China Sea and South Pacific to the east of the Malacca Straits as well as the Bay of Bengal, Arabian Sea and the waters of Africa to the west.
- PM Modi outlined **India's broad vision for the Indo-Pacific** in his address to the **Shangri La Dialogue**, an annual forum that brings the **region's defence establishments together**.
- The PM's speech on the Indo-Pacific helped bring the **new geopolitical construct to the centre of India's worldview**.

- A “**stable, secure and prosperous Indo-Pacific Region**” is an “important pillar” of India’s strategic partnership with the United States.
- The emphasis shown by the US on the ‘Indo-Pacific’ can be termed as its strategic initiative towards India.
- **ASEAN** is one of the **crucial building blocks of the Indo-Pacific**. United States, India, Japan, and Australia the “**Quad**” group is emphasizing “**Indo-Pacific**” as a **new strategic space**.

Brief History about Andaman Sea:

- The consolidation of British hegemony in the Indian Ocean at the dawn of the 19th century and its accommodation with France (in Indo-China) and the Netherlands (in the East Indies, now known as Indonesia) left the **Andaman Sea in a tranquil state**.
- The **extended peace was shattered** during the **Second World War** when Japan occupied **large parts of East Asia**, ousted Great Britain from Singapore and raced towards Northeast India through Burma.
- Imperial Japan also occupied the Andaman and Nicobar Islands. It needed a massive collaborative effort to reverse the aggression.
- After the **Second World War**, the **Andaman Sea and the Bay of Bengal** became marginal to the **power play between Washington and Moscow** during the Cold War.
- Now, the **rise of China and Beijing’s projection of naval power** way beyond its home waters is beginning to put the Andaman Sea back in play.

Importance of Sub-region of the Andaman Sea:

- One such **sub-region the Andaman Sea** is likely to preoccupy India in the coming years. The **Andaman Sea** is flanked by the **Andaman and Nicobar chain of islands in the West, Myanmar to the north, the Thai-Malay peninsula to the east, and the Sumatra island to the south**.
- It funnels into the **Straits of Malacca that connects the Indian and Pacific Oceans**. The large amount of shipping that enters the Andaman Sea from the east heads to Singapore, from where it turns the Pacific Ocean.
- Andaman Sea is rapidly regaining its **strategic salience**. At the dawn of the modern era, many of the **geopolitical contestations** involving the Portuguese, Dutch, French and the British took place in the **waters of the Andaman Sea**.

Recent Actions by China in Sub-region of Andaman Sea:

- Beijing signed an **agreement with Naypyidaw** on building a **deep-water port at Kyaukpyu**. It will be an important part of the **China-Myanmar Economic Corridor**, which would **connect Kyaukpyu to the Yunnan Province** through rail and highways.
- China already built an **oil and gas pipeline system** that moves hydrocarbons from **Kyaukpyu to inland China**.
- Thailand ordered a feasibility **study of the Kra Canal**, which will cut through the **Kra Isthmus and link the Andaman Sea to the Gulf of Thailand**. There is a push from china to launch the Project.
- Beijing has sold **submarines to Thailand and Bangladesh** and its military cooperation with other littoral states of the Andaman Sea has grown steadily. Recently, China conducted **naval exercises with Thailand and Malaysia**.
- Building **strategic infrastructure**, like China-Myanmar Economic Corridor and the Kra Canal allows Beijing reduce its current dependence on the Malacca Straits and **access the Indian Ocean directly**.

Conclusion:

- As the waters of the **Andaman Sea turn turbulent**, India too has begun to accelerate the **development of civilian and military infrastructure** in the Andaman and Nicobar Island Chain.
- It has also stepped up **political engagement** with the Andaman littoral states. But Delhi’s pace might turn out to be too slow to cope with the **rapid strategic transformation of the Andaman Sea**.
- Therefore, **ASEAN** must form the **geographic core to any Indo-Pacific architecture**.
- India must **increase its strategic alignment** with the other countries in Indo-Pacific region in order to **balance the security concerns** emanating from China’s aggressive stance.
- Build-up of **India’s naval capabilities**, if India has to emerge as one of the main players in the Indo-Pacific. Freedom of navigation, unimpeded commerce, and peaceful settlement of disputes in accordance with international law will make our sea lanes the **pathway to prosperity**.

14. SETTING A PROPER DIET PLAN

Introduction:

- Despite being one of the **fastest growing economies** in the world, **India** has been ranked at **103 out of 119 countries**, with **hunger levels categorised as “serious”**, in the **Global Hunger Index 2018**.
- Recently, **three girls died of starvation** resulting from **prolonged malnutrition** in the national capital Delhi, which has a **high per capita income**.
- **India’s child malnourishment level** is not only the highest in the world but **varies considerably across States**.
- It is a well-known fact that the **foundation of a healthy life** is laid in the **first six years**.
- **At least one in five Indian children** under the age of five are wasted, which means they have extremely low weight for their height, reflecting acute under-nutrition, according to the **Global Hunger Index 2018**.
- The only country with a **higher prevalence of child wasting** is the war-torn nation of **South Sudan**, says the report.

India: Home to the largest number of malnourished children in the world:

- India is home to over **53.3 million stunted**, **49.6 million underweight** and 29.2 million wasted (low weight for height) children under five.
- As per the **National Family Health Survey-2016**, the **proportion of stunted** (low height for age) children under five is significantly **higher (38.4%)** than **global (22.9%) averages**.
- The **underweight (low weight for age)** children rate (**35.7%**) is a lot higher than the **global average (13.5%)** too.
- It is a country that fares poorly on many nutrition indicators. There are **19.8 million children in India**, under the age of 6, who are undernourished.

Major challenges to address Mal-nutrition:

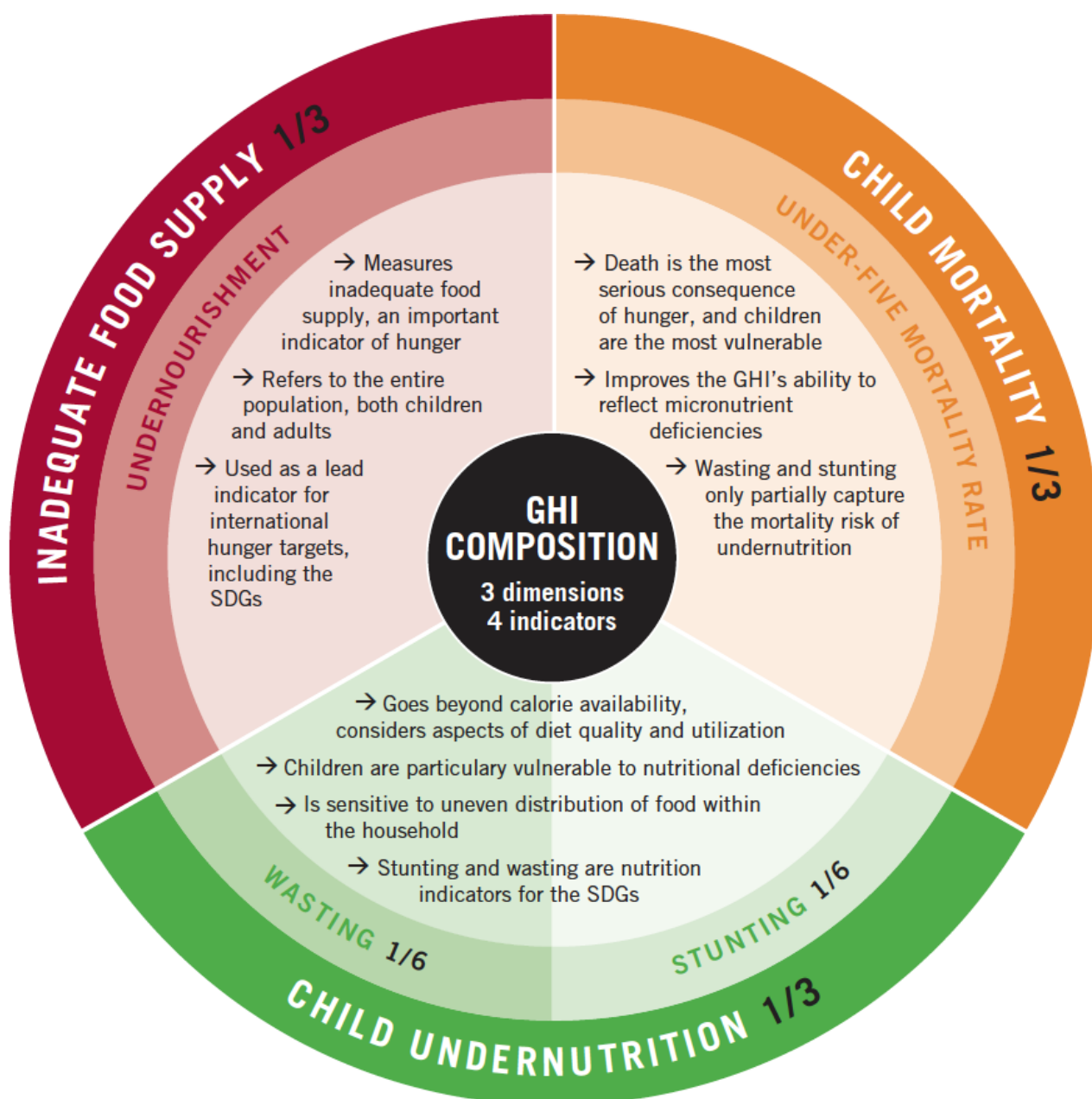
- Faster economic growth has enormous benefits, but it is by no means sufficient and sustainable if millions of children **remain undernourished**, as it not only impacts early **childhood health** and **imposes disease burden** but also **affects education, wages and productivity** when they grow up, which will impact India’s growth.
- Worryingly, malnutrition in some of its **agriculturally-developed districts** (Karnal, Panipat, Sonipat, Rohtak as well as in Gurugram) is **even higher** than the average of Odisha.
- Recently, **Madhya Pradesh** has registered double-digit growth in food grain production making it one of the wheat granaries of India, but **acute malnutrition is still critical** in most of its districts with a high proportion of underweight (42.8%) and stunted children (41.9%).

Economic Growth can solve Mal-nutrition:

- One problem lies with the **current thinking of growth-oriented development**.
- No doubt, the low income and Empowered-Action-Group (EAG) States face major challenges to **improve malnutrition**, but, **two EAG States, Chhattisgarh and Odisha**, have performed better on this front compared to **Gujarat and Maharashtra** where **per capita income is almost double**.
- The development path prevalent in Gujarat is more **about growth and investment**, which, however, has not been able to translate as **better nutritional status in the State**.
- **Odisha**, which is a low income State, has a **better network of Integrated Child Development Services (ICDS)**, public health facility/workforce per lakh population and educational attainment among women, which have translated into a **better nutritional status** when compared with Gujarat.
- Further, tribals, rural, poor and illiterate mothers’ children are badly off in so-called **developed States of Haryana, Gujarat and Punjab**.
- These groups are also affected in poorer States of U.P., Bihar, Jharkhand and Madhya Pradesh.
- Around two-thirds of stunted/underweight children are from 200 districts of both less developed and developed States.

Agriculture v. Hunger: Where the Problem lies?

- Another prominent idea is the need to link agriculture and nutrition, as agriculture provides answers to **most nutrition problems**.
- Our estimates, however, show **malnutrition continues to be high in agricultural surplus States** like Haryana (34% stunting and 29.5% underweight).
- To understand the contradiction between agrarian plenty and malnutrition, let us take the example of diversified food.
- With the increase in diversity in food intake, measured through **Food Intake Index using 19 food items in all 640 districts**, malnutrition (stunted/underweight) status declines.
- Only 12% of children are likely to be stunted and underweight in areas where **diversity in food intake is high**, while around 50% children are stunted if they consume **less than three food items**.



Example of Diversity Food Intake:

- A majority of children across districts in **Tamil Nadu** consume a reasonably highly diversified food, leading to **lower percentage of stunted/underweight** children across districts.
- Children in a majority of districts in West Bengal, Odisha, Kerala and Karnataka consume mediocre level of food items and malnutrition is relatively lower than in Rajasthan, U.P., Jharkhand, M.P., Gujarat, Bihar and Haryana (children in many of their districts consume less diversified food).
- The diversified food intake is very low in a majority of Indian districts; just 28% of children consumed over five items of the total 19 food items.

The way forward:

- An **inclusive and holistic approach**, including:
 - Controlling/regulating food price,
 - Strengthening the public distribution system (PDS) and
 - Income support policies for making food cheaper are important steps.
- The ICDS was a **high impact nutrition intervention**, but its **universal availability and quality are questionable due to poor functioning**.
- The government must **broaden the ICDS programme** by **ensuring diversity in food items in worst-hit districts**.
- **But sustained budgetary commitment towards nutrition components is not sharply visible**.
- The launch of the **National Nutrition Mission** as a strategy **to fight maternal and child malnutrition** is a welcome step towards achieving the targets of underweight and stunted children under five years from 35.7% to 20.7% and from 38.4% to 25% respectively by 2022.

15. A REALITY CHECK ON COOPERATIVE FEDERALISM**Introduction:**

- Indian model of federalism is called **quasi-federal system** as it contains major features of both a federation and union.
- Federalism is a system of government in which power is divided between a **central authority** and **constituent political units**.
- The Constitution of India establishes a **federal structure** to the Indian government, declaring it to be a **“Union of States”**.

Defining Federalism

Dual Federalism	Cooperative Federalism
Views the constitution as giving a limited list of powers to the national government, leaving the rest to sovereign states	Federalism as a cooperative system of intergovernmental relations in delivering goods and services to the people
Marble Cake Federalism	Competitive Federalism
“As the colors are mixed in a marble cake, so functions are mixed in the American federal system”	Views the levels of government as being in competition to provide packages of services and taxes

Importance of Cooperative Federalism:

- Cooperative federalism is the concept which reflects the **relationship between centre and state** where they **both come together** and resolve the common problems **with each other’s’ cooperation**.
- With the **collaborative efforts and cooperation**, different level of governments in an amicable manner, contributes towards the growth of the country.
- It shows the **horizontal relationship between union and states** and shows neither is above the other. To ensure this relationship between centre and state, Indian constitution has incorporated **certain instruments** like inter-state council, Zonal council, 7th schedule etc.

Evolution of Cooperative Federal Structure in India from a Centralised Administration:

- In 1974, when the Supreme Court commented on the Constitution envisaging a **cooperative federal structure**, federalism has come a long way in India.
- In relation to the imposition of **President’s rule under Article 356** of the Constitution, federalism is far more mature.
- Between **1947 and 1977**, there were **44 instances** when the power to **impose President’s rule was exercised**.
- Between **1977 and 1996**, the power was exercised **almost 59 times**. Prime Minister Indira Gandhi’s cabinet resorted to the power an **estimated 50 times in her 14 years**.
- From **1991 till 2016**, there have been **32 instances** of the exercise of this power compared to 92 instances in the preceding period.

- In **S.R. Bommai v. Union of India (1994)**, the limitation laid down by the Supreme Court might have placed **gentle breaks on exercise of this power (President's Rule)**, but the Centre continues to wield superior legislative powers, including residuary powers and legislative precedence.

Although Cooperative Federalism has been Improved, Instances of Contentious terrain:

- **Taxation powers** are contentious issue and the Central government has won most of the disputes purely due to express provisions in the Constitution.
- In the **Goods and Services Tax (GST)** scenario, States have foregone **some taxation powers (octroi, entry tax, luxury and entertainment taxes, etc.)** but have powers to levy taxes through **panchayats and municipalities**.
- Such powers can result in an **anomalous situation of a transaction being taxed under GST laws and a local law**, and this is yet to be tested in court.
- After the GST amendments to the Constitution, **States have power to levy tax on sale of petrol, diesel, etc.** and these would be **revenues of the respective States**. However, the GST Council is **yet to recommend inclusion of these items under GST**.
- The southern States have been vocal about the **false positives and negatives from tax sharing** and this mechanism is largely subject to the **recommendations of the Finance Commission (FC) and action by Parliament**.
- State levies and State GST form part of a State's revenue. Under **Article 269A(1)** the GST Council and not the FC has the powers to make recommendations in relation to **sharing of taxes from inter-State trade**.

Anomalies in the interpretation of the constitution with respect to the taxation laws:

- **ARTICLE 269A(1)**: Under Article 269A(1), the **GST Council** and not the Finance Commission, has the **powers to make recommendations** in relation to sharing of taxes from **inter-State trade**. This is important, since **States have a vote in the GST Council**.
- **ARTICLE 270(1)(A) & 270(2)**: They provide that **taxes levied under the GST laws** will be shared in the **manner prescribed in Article 270(2)**, which takes us to the **Finance Commission and not the GST Council**.
- The possible anomaly between roles and powers of the Finance Commission and the GST Council has not been tested, but it may make sharing of these revenues subject matter of the Finance Commission and Parliament rather than the GST Council, where States have more powers.
- **Recommendations of the Finance Commission** are placed before Parliament and **States have no role in the debate**.
- There is also **no provision for an aggrieved State to challenge the report of Finance Commission** on certain grounds or seek mandatory enforcement of its recommendations.
- If a State is aggrieved by the recommendations itself, an **aggrieved State** would have to **litigate in the Supreme Court** as it appears that **the GST Council is yet to establish a mechanism** for resolving differences in terms of **Article 279A(11)**.

Conclusion:

- To bring competition, the centre should **cooperate with the states** by providing **necessary autonomy** in their **policy making** and allocating them the required funds to spend based on their own priorities.
- Cooperative federalism and competitive federalism are not mutually exclusive instead they both are two sides of the same coin. Both should be **equally present for the development of a nation as a whole**.
- The **cooperation forms the ground base** on which competition can begin. There has to be a balance between cooperative and competitive federalism.
- States don't merely seek **parity with each other**, historically States have also sought **parity with the Centre** as suggested and recommended in Sarkaria and Punchhi Commissions.
- In an era of coalition politics, **GST council and its mechanism to solve the disputes to arise will be a true test of cooperative federalism**.

16. ANOTHER ORBIT: ON GSAT29 LAUNCH

Context:

- The **Indian Space Research Organisation** has marked a big milestone by successfully testing its **heavy-lift launcher** while launching an **advanced communication satellite**.
- The **Geosynchronous Satellite Launch Vehicle MarkIII** (GSLV MkIII) launched **GSAT29**, an advanced communications satellite, into a geosynchronous transfer orbit where the satellite's closest approach to earth would be 190 km and the farthest 35,975 km.

Work of GSLV-MkIII and GSAT-29:

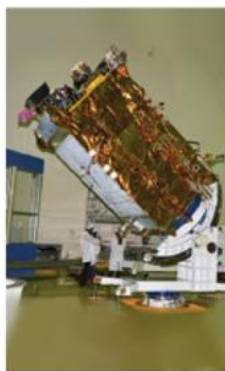
- According to ISRO, the **GSAT-29 satellite** is intended to serve as a test bed for several new technologies. It is specifically designed to cater to **communication requirements of users** from remote areas of the country. The mission life is about 10 years.
- GSLV-MkIII is the fifth generation launch vehicle developed by ISRO and is designed to place satellites of up to 4,000 kg in GTO.
- GSLV MkIII is the **heaviest launch vehicle** made in India, and **GSAT29** is the **heaviest satellite** to take off from Indian soil.
- The heavy lift launcher is going to be used for Chandrayaan-II in early 2019.

GSLV MkIII-D2 is the second developmental flight of Geosynchronous Satellite Launch Vehicle Mark III. In this flight, the vehicle will carry the 3423 kg GSAT-29 satellite and place it in Geosynchronous Transfer Orbit (GTO).



GSLV MkIII-D2

- GSLV MkIII is the fifth generation launch vehicle developed by ISRO.
- GSLV MkIII vehicle is designed to place a satellite of up to 4000 kg in GTO.



GSAT-29

- GSAT-29 is a multibeam, multiband communication satellite.
- It will be launched into an elliptical GTO with a 190 km perigee and 35,975 km apogee with an inclination of 21.5 deg.
- GSAT-29 will be taken to its final Geostationary Orbital location by firing its onboard propulsion system in steps and the satellite will be stationed at 55 deg East longitude.

Targeted GTO:

Perigee: 190 km, Apogee: 35,975 km, Inclination: 21.5 deg

67th

Launch vehicle mission from SDSC SHAR

33rd

Communication Satellite built by ISRO

23rd

Launch from Second Launch Pad

5th

Launch of 2018

2nd

Developmental Flight of GSLV MkIII

GSAT-29 will improve Internet in J&K, NE:

- **Ku-band and Ka-band payloads** are configured to cater to the **communication requirements** of users including those from remote areas especially from **Jammu & Kashmir** and **North-Eastern regions** of India.
- The **Q/V-Band communication payload** onboard is intended to demonstrate the future high throughput satellite system technologies.
- A **high-resolution camera** will be demonstrated at the **higher geostationary orbit (GEO)** of around 36,000 km for the first time. GEO satellites orbit along the equator and appear 'fixed' at a point over the country.
- The **Geo High-Resolution Camera** to aid in **high-resolution imaging**. For the first time, an **optical communication payload** will be utilised for data transmission at a very high rate.
- Earth imaging cameras are put on **remote-sensing satellites** that orbit Earth at **around 600 km**, in polar orbits.
- GSAT-29 said the launch will help to **bridge the digital divide**.
- The **success of GSLV MkIII-D2** marks an important milestone in Indian space programme towards **achieving self-reliance** in launching heavier satellites.

Geosynchronous Satellite Launch Vehicle MarkIII (GSLV MkIII):

- The first successful experimental flight of the **GSLV Mk-III** was in 2014, when it carried a dummy crew module as a payload. Its **first developmental flight** was in 2017 on June 5, when it **launched GSAT-19**, weighing 3,136 kg.
- This is the second developmental flight and with these two launches, the Launcher is declared operational and **now PSLV and GSLV are operational**.
- ISRO successfully tested GSLV Mk-III, which is called **Launch Vehicle Mark-3 (LVM-3)** in an experimental flight in December 2014. It also launched the first **developmental flight of LVM-3**, which carried GSAT-19 in June 2017.

GSLV used Indigenous Cryogenic Engine:

- This is on the GSLV's third stage. It uses **liquid hydrogen as fuel and liquid oxygen as oxidiser**. In the liquid form, they give **high amounts of energy per unit mass**, due to which the amount of fuel to be carried decreases.
- **Hydrogen and Oxygen are clean fuels** and when they combine, only water is produced. These are economical as **liquid oxygen costs less than gasoline**.
- It is **highly efficient rocket stage** that gives more thrust for every kg of propellant it burns, compared to solid and Earth storable liquid propellant stages.
- **Cryogenic engines** provide unprecedented thrust to GSLV rockets in their final stages, keeping the fuel loads relatively low.
- The impulse achievable with Cryo fluids is 450 secs, compared with 300 secs for other fuels.

Some of the recent achievements by ISRO:

- Launching **104 satellites** with one rocket
- South Asia Satellite (**GSAT-9**) launch
- Launch of **ISRO's 'Fat Boy'**
- **31 satellites** in a single flight
- Sending another **communication satellite** in the space
- The success of **GSLV MkIII-D2** marks an important milestone in Indian space programme towards achieving self-reliance in launching heavier satellites.
- The success of this flight also signifies the **completion of the experimental phase of GSLV Mark III**.

Conclusion:

- The **multi-band, multi-beam satellite** can cater to the **communication needs** of people in Jammu and Kashmir and the Northeast.
- ISRO scientists had termed the launch **crucial for the space agency** as the rocket would be used for the **ambitious Chandrayaan-2** and the **country's manned space missions**.
- The Government recently approved the funding for the **next 10 flights of GSLV Mk-III** at an estimated cost of **Rs 4,338 crore**. This is supposed to take care of GSLV Mk-III missions till 2024.
- The GSLV MkIII has not just boosted the **satellite into its orbit**, but also restored **morale at ISRO**, which had been dented by the GSAT 6A setback.
- **Future space exploration** will require us to inhabit the moon, initially, and later Mars. This is a humongous task for any one nation to carry out.
- **Cooperation amongst space-faring nations** will become essential and the ISS experiment is a good proof of this concept. Going forward, we must begin **utilizing and leveraging each other's strengths** for common benefits.

17. WHEN JUDGES LEGISLATE**Introduction:**

- Through **free elections**, citizens of a democracy confer powers upon their leaders that are defined by law.
- In a **constitutional democracy**, power is divided so that the legislature makes the laws, the executive authority enforces and carries them out, and the judiciary operates independently.
- No one branch can control all power in a democratic system. This is referred to as the **Separation of Powers**.

- In many recent judgments, the Supreme Court has become **hyper-activist in making laws**.

Supreme Court duty is not to Legislate Laws:

- **Making laws is the function of the legislature.**
- As observed in **Union of India v. Deoki Nandan Aggarwal (1991)**, “The power to legislate has not been conferred on the courts.”
- In **Suresh Seth v. Commissioner, Indore Municipal Corporation (2005)**, the court observed: “Under our Constitutional scheme, Parliament and Legislative Assemblies exercise sovereign power to enact laws.”
- In **Ram Jawaya v. The State of Punjab (1955)**, the court observed: “Our Constitution does not contemplate assumption, by one organ or part of the state, of **functions that essentially belong to another**.”
- This implies that there should be a **broad separation of powers in the Constitution** among the three organs of the state, and that one organ should not encroach into the domain of another. If this happens, the **delicate balance** in the Constitution will **be upset** and there will be chaos.



Importance of Judicial Branch:

- **Independent and professional judges** are the **foundation of a fair, impartial, and constitutionally guaranteed system of courts of law** known as the judiciary.
- This independence does not imply judges can make decisions based on personal preferences but rather that they are free to make lawful decisions even if those decisions contradict the government or powerful parties involved in a case.
- **Article 50 of the Indian Constitution**: Separation of judiciary from the executive. The state shall take steps to separate the judiciary from the executive in the public services of the State.
- There are **three roles for the judicial arm** of Government:
 1. Review the constitutionality of government action and legislation.
 2. Interpret legislation and resulting action.
 3. Adjudicate other disputes not necessarily involving Government action or legislation.
- In democracies, **independence from political pressures** of elected officials and legislatures guarantees the impartiality of judges.

- Judicial rulings should be **impartial**, based on the facts of a case, individual merits and legal arguments, and relevant laws, without any restrictions or improper influence by interested parties. These principles **ensure equal legal protection for all**.

Is judicial discipline being observed?

Some Recent Instances:

- First, in **Arun Gopal v. Union of India (2017)**, the Supreme Court fixed **timings for bursting Diwali fireworks** and prohibited the **use of non-green fireworks**, although there are **no laws to that effect**.
- Second, in **M.C. Mehta v. Union of India (2018)**, the court annulled the statutory Rule 115(21) of the Central Motor Vehicle Rules, 1989, when it **directed that no BS-4 vehicle should be sold after March 30, 2020**, and that only BS-6 vehicles can be sold after that date.
- Third, in **Subhash Kashinath Mahajan v. State of Maharashtra (2018)**, the court amended the **Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Act, 1989**, by annulling Section 18 which said that **no anticipatory bail will be granted** to persons accused under the Act; by requiring a preliminary enquiry; and by prohibiting arrest under the Act except with permission in writing by the appropriate authority.
- Fourth, in **Rajesh Sharma v. The State of Uttar Pradesh (2017)**, the court felt that **Section 498A of the Indian Penal Code** was being misused. So it amended that Section by requiring complaints under that provision to be sent to a **Family Welfare Committee** constituted by the District Legal Services Authority, although there is **no such requirement** in Section 498A.
- Finally, the **National Green Tribunal (NGT)** ordered that **no 15-year-old petrol-driven or 10-year-old diesel-driven vehicle will ply in Delhi**, and the Supreme Court has directed impounding such vehicles, though neither the NGT nor the Supreme Court are legislative bodies.

Role of Judiciary in Legislative matters:

- **Judicial review:** Power of judiciary to **examine the constitutional validity** of legislative enactments and executive orders of the government.
- **Judicial activism: Proactive role** played by the judiciary in protection of rights of citizen and promotion of justice in society. It amounts to the assertive role by judiciary where it forces the other two organs to discharge their constitutional duties.
- **Judicial restraint:** Role of judges should be **limited to only interpretation of law** and should leave the law-making business to the legislature and the executive.
- As it is against the constitutional principle of separation of powers and since judiciary is a **non -elective body**, it does not enjoy popular will to make laws.

Conclusion:

- If judges are free to make laws of their choices, not only would that **go against the principle of separation of powers**, it could also **lead to uncertainty in the law and chaos** as every judge will start drafting his own laws according to his whims and fancies.
- **Our Constitution** is our **act of revolution** and the Judiciary its protector. Today when the same Judiciary oversteps its limits, it is indispensable that the decision is corrected, reviewed and reversed by a larger Bench.
- In a country governed by a **written Constitution**, the democratic right flows from the **attribute of constitutional sovereignty**. We cannot claim our fundamental right or any other legal rights, unless we retain the **structure of our sovereignty**.

18. FURTHER STRESSED BY THERMAL POWER

- **Introduction:**
- **Water and energy are closely linked.** The water industry is energy-intensive, consuming electricity for desalination, pumping, and treatment of wastewater.
- The energy industry is also water-intensive, which is the focus of this report. Water is used for resource extraction (oil, gas, coal, biomass etc.), energy conversion (refining and processing), transportation and power generation.

- The **Composite Water Management Index (CWMI) by the NITI Aayog**, which was released earlier, shows that **600 million people face high to extreme water stress in India.**
- The report, which was published in association with the **Ministry of Water Resources, Ministry of Drinking Water and Sanitation and the Ministry of Rural Development**, places India at a dismal **120** among 122 countries in the **water quality index.**
- Low -performing states house approximately **50% of India's population.**

Composite Water Management Index (CWMI) by the NITI Aayog:

- The CWMI is an **important tool to assess and improve the performance** of States/ Union Territories in **efficient management of water resources.**
- This has been done through a first of its kind water data collection exercise in partnership with Ministry of Water Resources, Ministry of Drinking Water & Sanitation and all the States/ Union Territories.
- The index would provide useful information for the States and also for the concerned Central Ministries/Departments enabling them **to formulate and implement suitable strategies for better management of water resources.**
- CWMI has been developed by NITI Aayog comprising **9 broad sectors with 28 different indicators** covering various aspects of ground water, restoration of water bodies, irrigation, farm practices, drinking water, policy and governance.
- The projected water demand of the energy sector makes it an important point for the NITI Aayog to consider while bringing out future iterations of the CWMI.

Basis for CWMI Rating:

- The system of ratings is based on their performance in
 - Augmenting water resources and watersheds.
 - Investing in infrastructure
 - Providing rural and urban drinking water
 - Encouraging efficient agricultural use.

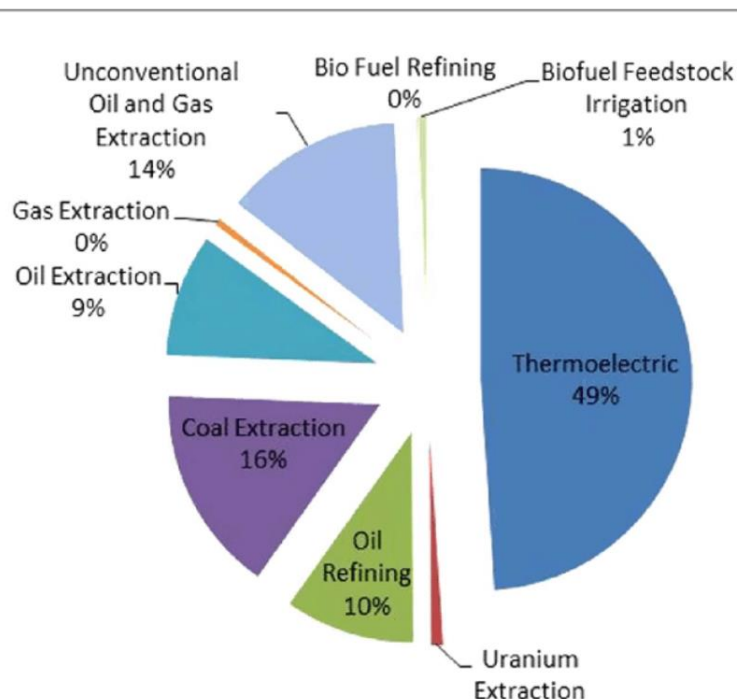
Usage of Water in Energy Sector:

- The **share of water** consumed by this sector was 0.62% in 2010. It is expected to rise up to **1.37% in 2030 and 8.98% in 2050.**
- The projected water demand of the energy sector makes it an important point for the NITI Aayog to consider while bringing out future iterations of the CWMI.

Usage and future Water demand in the energy sector:

- As per the **Central Electricity Authority (CEA), March 2018**, thermal electricity accounts for more than **86% of India's total power generation.**
- The analysis shows that **77% of India's total electricity** comes from thermal power plants that are dependent on **freshwater sources.**
- Of all the freshwater-cooled thermal plants, 38.9% of generation capacity is installed in areas with **high or extremely high water-stress.**
- **By 2030**, more than **70% of India's existing thermal power utilities** are likely to experience an increased level of water competition from agricultural, urban, and other industrial demands.

Percentage of Water Consumption in Energy Sector



Way Forward: There is a need of measuring water consumption data of energy sector

- The CWMI also raises **three main issues related to data:**
 - ✚ Limited coverage,
 - ✚ Unreliable data and
 - ✚ Limited coordination and sharing
- It can easily be tackled by using the **existing CEA reporting mechanism** for the daily generation.
- **Daily water withdrawal and consumption reporting should be mandated.** These can be measured with existing technology and added to this reporting framework.
- In addition, **information about water stress, power plant siting** (location) and so on must be shared seamlessly across departments, a service that the CWMI could perform
- Such information will also **help in the implementation** of the Ministry of Environment, Forest and Climate Change Notification, which mandates specific water consumption norms for existing and new thermal power plants

Conclusion:

- **Composite Water Management Index (CWMI)** predicts that a **persistent water crisis will lead to an eventual 6% loss in the country's Gross Domestic Product by 2030.**
- Gujarat, Madhya Pradesh and Andhra Pradesh are some of the States that **initiated reforms for judicious water use.**
- The CWMI concludes by noting that **water-scarce States** such as Gujarat, Madhya Pradesh, Andhra Pradesh, Karnataka, Maharashtra and Telangana are **leaders in the CWMI Index.**
- Factoring in the **water-energy nexus linkages**, especially the metrics around power plant water withdrawal and consumption, will only help make the Index better and the States better prepared to **manage their water and power resources.**
- As the power sector consumes more water, competition between power and the other thirsty players is only likely to increase a factor that future editions of the CWMI will have to consider.

19. A CRIPPLING SHORTAGE: ON VACANCIES IN COURTS**Introduction:**

- **Indian Judiciary** has come a long way from being a **colonial institution** to one that serves as the **guardian of the Constitution of a sovereign India.**
- The journey hasn't been easy and it's only imperative for us to judge one of the **pillars of our democracy** at a time when the distrust between executive and judiciary is paramount.
- Indian Judiciary has no doubt done a commendable job but **it faces certain inherent problems**, which show the weaknesses and defects of the system, and which **require immediate reforms and accountability.**
- According to the **latest National Judicial Data Grid statistics**, over **3 crore cases** are pending across courts in India.

A RECORD 6,000 VACANCIES

Vacancies in subordinate courts				Vacancies in subordinate courts				Vacancies in high courts 36% (392 out of sanctioned 1,079 posts vacant)
States	Sanctioned strength	Vacancies	In %	Northeast states	Sanctioned strength	Vacancies	In %	
Bihar	1826	825	45%	Meghalaya	97	58	60%	SC vacancies 19% (Six out of 31 sanctioned posts vacant)
UP	3204	1344	42%	Mizoram	63	33	52%	
Delhi	799	316	40%	Arunachal	28	11	39%	Source: Law ministry
MP	2021	748	37%	Manipur	49	18	37%	
Tamil Nadu	1257	341	27%	Sikkim	23	8	35%	
Gujarat	1511	385	26%	Nagaland	34	11	32%	
Karnataka	1303	325	25%	Tripura	107	31	29%	
All India	22,677	5,984	26%					

Crumbling infrastructure crippling India's courts:

- A recent report by the Supreme Court claims there are **just 16 judges to address the needs of every million Indians**. It further states, that unless the judges' strength is at **least doubled in the next 10 years**, the judiciary will be unable to handle the increasing number of **cases being filed in lower courts and "deliver justice in its truest possible sense"**.
- The court has put the actual figure at 5,133 out of 22,036 sanctioned posts. There are ***more than 5,000 vacancies*** in the subordinate courts.
- A Bench headed by Chief Justice of India Ranjan Gogoi has pulled up State governments and the administration of various High Courts for the **delay in filling these vacancies**.
- Answers provided in the **Rajya Sabha** reveal that as on March 31, 2018, nearly a **quarter of the total number of posts in the subordinate courts remained vacant**.
- The State-wise figures are quite alarming, with Uttar Pradesh having a vacancy of 42.18% and Bihar 37.23%. Among the smaller States, Meghalaya has a vacancy level of 59.79%.
- **Law Commission in 1987**, had recommended that **India should raise the number of judges to 50 for every million population**

Importance of Sub-ordinate Courts to Common Citizens:

- 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.
- Any failure to allocate the required **human and financial resources** may lead to the **crippling of judicial work** in the subordinate courts.
- It will also amount to letting down poor litigants and under-trials, who stand to suffer the most due to judicial delay.
- **Huge workload:** Judges in high courts hear between **20 and 150 cases every day**, or an average of 70 hearings daily. The average time that the judges have for each hearing could be as **little as 2 minutes**.
- **Judicial Backlog:** A **mindboggling 3 crores cases** are pending at different courts in India. Over 21 lakh cases being at least 10 years old.
- This **doesn't inspire confidence in a judiciary** which is the hope to many in a country marred by corruption, inequalities and what not.

Judicial Backlog impact on Society:

- **Socio-economic fallout:** A **weak judiciary** (defined by the speed and predictability of the trial outcome) can lead to **lower per capita income**; higher poverty rates; lower private economic activity; poorer public infrastructure; and higher crime rates and more industrial riots.
- **Increasing cost of doing Business:** Due to poor enforcement, **cost structure** of the entire economy to go up as the interest rates on credit are higher, due to the inclusion of a risk premium by the lender.
- **Violation of Fundamental Right:** Supreme Court has said that **Article 21** of the Constitution entitles **prisoners to a fair and speedy trial** as part of their **fundamental right to life and liberty**.
- **Quality of judgement suffers:** It is not uncommon to **see over 100 matters** listed before a judge in a day leading to **very less time on analysing every facts** of the case.

What is the Process of appointments of Judges in District Courts:

- According to the Constitution, **district judges are appointed by the Governor in consultation with the High Court**.
- Other subordinate judicial officers are appointed as per rules framed by the Governor in consultation with the High Court and the State Public Service Commission. The High Courts have a significant role to play.
- **Economic Survey 2017-18** called for **coordinated action** between government and judiciary to **reduce pendency of commercial litigation** for improving ease of doing business (EODB) and boost economic activities.
- **Gram Nyayalaya – mobile village courts in India** established under Gram Nyayalayas Act, 2008 for **speedy and easy access to justice system** in the rural areas of India.
- In terms of Section 3(1) of the the Act, it is for the State Governments to establish **Gram Nyayalayas** in consultation with the respective High Courts.

Conclusion:

- A **smooth and time-bound process of making appointments** would, therefore, require **close coordination** between the High Courts and the State Public Service Commissions.
- **Indian Judicial Services:** The **proposal for an All India exam** along the lines of Civil Services has been mooted many a time, the first instance being 1960. Setting **standards of judicial recruitment examinations** to improve the quality of district judges.
- With immediate benefits, AIJS would go on to cater to the vacancies in a big way, without compromising on either independence or merit. **Vacations in the higher judiciary must be curtailed by at least 10 to 15 days** and the court working hours should be extended by at **least half-an hour**.
- In **230th Law Commission in its report "reform in Judiciary" in 2009** recommended that there must be full utilization of the **court working hours** and Grant of adjournment must be guided strictly by the provisions of **Order 17 of the Civil Procedure Code**.

20. A 21ST CENTURY REVOLUTION: ON BILL GATES MOVE TO SCALE UP SANITATION

Introduction:

- According to **UNICEF**, 22.2% of children, or 151 million, under five years were stunted globally in 2017.
- The **World Bank** says **annual healthcare costs** from lack of sanitation in developing countries is a **staggering \$260 billion**.
- In many places, children play amidst faeces in the **open and contract disease**, resulting in **malnutrition and stunting**.
- India's record in **treating urban sewage is poor at 30%**, and a third of about 847 large sewage treatment plants are not functional, according to **BMGF estimates**.
- Microsoft founder Bill Gates displayed a glass beaker with human faeces on stage at a **sanitation conference in Beijing** recently, and he was praised by World Bank president Jim Yong Kim for **"making poop cool"**.
- Bill Gates explained and reasoned that **Innovation**, would expand sanitation quickly and **save children** in developing countries from the **crippling consequences of stunting**.

The Problem of Open Defecation in India:

- India is the seventh largest country in the world and is ranked second in population. Although India is one of the most populated countries, 67.6% of its population still resides in rural areas.
- **Rural India** has **rate of malnutrition** due to a higher level of poverty than urban areas, due primarily to many factors, such as **higher poverty rates, lack of sanitation, and decreased level of education**.
- **Open defecation**, the practice of people defecating out in the open wherever it is convenient, is one of the **main factors leading to malnutrition**.
- The government of India has **built 10 million toilets in rural areas** in the last two years. Unfortunately, most are **not utilized by the villagers**.
- In the **urban setting, 12 percent** of the population open defecate and **rural areas that number is 72 percent**.
- Open defecation leads to polluted water; up to 75 percent of India's surface water is polluted. When water is exposed to untreated sewage it becomes a **breeding ground for parasites** and **water-borne diseases** such as cholera, dysentery, e.coli, and salmonella.
- **Human exposure** can come from **consuming the contaminated water or eating foods that are washed or irrigated with the polluted water**.
- **Children** are **more susceptible to these diseases** which frequently lead to diarrhoea. Once a child becomes infected and begins diarrhoea it becomes **difficult for them to absorb need nutrients in the food** that they consume.
- The inability of their bodies to adequately absorb the food that they eat may eventually **lead to malnutrition, stunting, and even death**.
- Even once they seek medical treatment for their low birth rate and the problem is corrected, it frequently recurs once they return home **due to the continued consumption of contaminated water**.

- Many families also wish not to stay long periods at government nutrition centers due to the loss of work and income which puts a heavy financial strain on the family.

STP at home

Five-step treatment at a decentralised wastewater treatment system

SETTLER TANK |

Stabilises settled sludge by anaerobic digestion; dissolved and suspended matter remain untreated; removal of COD 20-25%, BOD 15-20%, TSS* 50-55%

HORIZONTAL BAFFLED REACTOR |

Anaerobic degradation of suspended and dissolved solids; removal of COD 25-30%, BOD 30-35%, TSS 10-15%

ANAEROBIC FILTER |

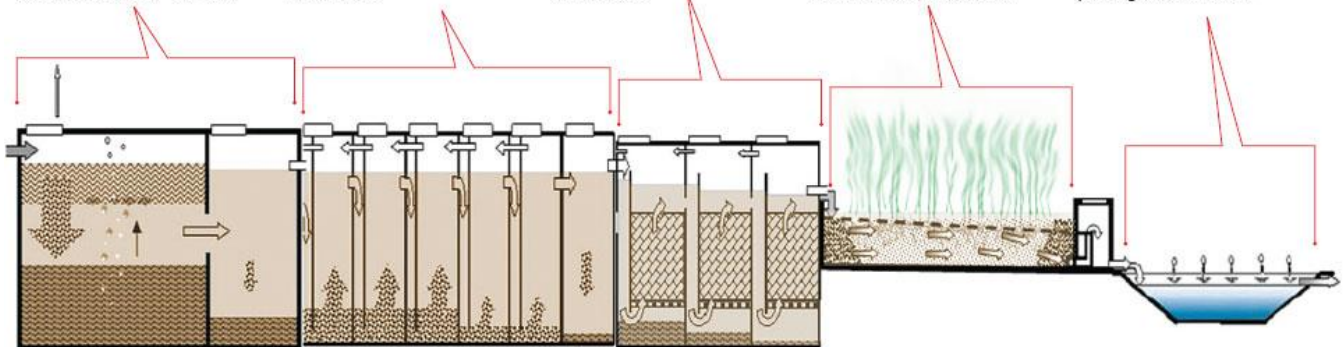
Water passes through filter media; enhanced digestion of organic matter; removal of COD 20-25%, BOD 15-20%, TSS 15-20%

CONSTRUCTED WETLANDS |

Open shallow basin with reeds; reduces organic contents and act as a filter; Removal of COD 15-20%, BOD 20-25%, TSS 5-10%

POLISHING POND |

Open shallow basin for removal of stabilised or inactive suspended substances; exposure to UV rays; removal of pathogens and odour



* Total suspended solids

Decentralising sanitation is the Need of the Hour:

- Bill and Melinda Gates Foundation (BMGF) has devoted \$200 million to **incubate new technologies** that will dramatically scale up sanitation.
- The challenge to decentralise sanitation, has **parallels** with the **historic shift from mainframe computing**, which only governments and large corporations could afford, to personal computers.
- Fast-expanding cities cannot have **massive sewage treatment plants**. What they need is **stand-alone processors, which will help communities and individuals**.
- These “**zero emission**” processors will end dumping of faecal sludge taken from septic tanks into rivers, lakes, farms and open spaces.
- They can also **prevent the death of workers** in septic tanks. Some models also attach a gasifier that can use municipal solid waste, providing a **solution to handle that urban waste stream as well**.

Solution: The reinvented toilet and omni processor waste treatment plants:

- At present, the standard is **flush toilets connected to sewers**.
- But the **multi-user reinvented toilets** have enormous advantages:
- There will be stand-alone facilities that are aesthetically designed, finely engineered and equipped with reliable chemical processes.
- What makes these **reinvented toilets special** is that **they expel nothing**. They turn liquid waste into clear water for flushing, and solids into pellets or ash that is fertilizer.
- They produce ash from solids, while **reusing the liquid as non-potable water** after treatment. The future belongs to this **Multi-User Reinvented Toilets**. The prototypes are undergoing trials in Coimbatore and Durban.
- Technology is ready with a “**zero effluent**” toilet, **national policy should make it accessible to everyone**.
- Success will depend on making **large community deployments**, and developing **cost-effective models for individuals**.

Conclusion:

- Initiatives **creating an annual ritual**, aligned with prevalent religious beliefs, when a village is declared open defecation free can **ensure change** is celebrated and thus, **sustained in the long run**.
- The **2017 Swachh Survekshan survey** conducted **by the Quality Council of India** reports that **62% of rural households now have a toilet**.
- More significantly, the survey concludes that **more than 90% of the individuals** who had access to toilets were using them.

- For India to **permanently eradicate open defecation**, the Swachh Bharat Mission must adopt **three pillars of support**.
 - The first must **provide and maintain the infrastructure** needed to aid toilet use.
 - The second must **motivate people to change behaviour** towards toilet use and
 - The third must **harness cues and automatic habits** to drive positive behaviour.
 It's time **policymakers start focusing** on the third pillar, before the facade wobbles.

21. MAKE IT THE INDIAN WAY: WHY THE COUNTRY MUST ADAPT TO ADDITIVE TECHNOLOGIES

Introduction:

- The **manufacturing landscape** is ever-changing. One of the most significant drivers of this change is the emergence of **advanced manufacturing technologies** that are enabling **more cost effective and resource-efficient small-scale production**.
- In combination with other prominent trends such as servitisation, personalisation and presumption, the emergence of **Additive Manufacturing** (commonly known as 3D printing) as a **direct manufacturing process** is leading companies to rethink where and how they conduct their manufacturing activities.
- The adoption of additive manufacturing (AM) and other advanced manufacturing technologies appears to herald a future in which value chains are **shorter, smaller, more localised, more collaborative**, and offer **significant sustainability benefits**.
- The Industrial revolution somehow bypassed India, but we have a **unique opportunity** to catch the wave of the **manufacturing revolution** if we can learn to surf.



3D printing:

- 3D printing is a phrase coined by the media and is often **used to refer to all types of additive manufacturing**.
- However, **3D printing** is defined as “**fabrication of objects** through the deposition of a material using a print head, nozzle or other printer technology”.
- **Industrial 3D printing** has begun to transform manufacturing in Western countries. The 3D printing has not yet entered our everyday lexicon, and even people who have heard of it view it as a toy technology that geeks play with, **creating prototypes of robots** using small machines.
- By eliminating the need to hold a large inventory of parts, set up an assembly line and purchase costly machines, 3D printing and adaptive manufacturing reduces capital and space requirements as well as the carbon footprint.

What is Additive Manufacturing?

- Additive manufacturing which was defined by the industry as **“making objects from 3D data, usually layer upon layer”**.
- In additive manufacturing, the physical object to be built is **first designed in software**. This design is fed to **computerised machines, which build that object layer by layer**.
- In practice the phrases 3D printing and additive manufacturing may be used **interchangeably** by some sources so it's important to understand the process which is actually being discussed.
 - Additive manufacturing is the **industrial version of 3-D printing** that is already used to **make some niche items**, such as medical implants, and to produce plastic prototypes for **engineers and designers**.
 - And while 3-D printing for consumers and small entrepreneurs has received a **great deal of publicity**, it is in manufacturing where **the technology** could have its most significant commercial impact.
 - There are in fact a number of different **subtypes of additive manufacturing** including **3D printing**, but also **rapid prototyping** and **direct digital manufacturing (DDM)**. Recent advances in this technology have seen its use become far more widespread and it offers exciting possibilities for future development.
 - Additive manufacturing machines **work directly from a computer model**, so people can devise **completely new shapes** without regard for existing manufacturing limitations.
 - Breaking with traditional manufacturing techniques, such as casting and machining material, **Additive Manufacturing product gives designers far greater flexibility**.

The Benefits of Additive Manufacturing:

- Conventional manufacturing techniques are capable of producing a **great range of shapes and designs** but additive manufacturing takes **production to the next level**.
- One of the greatest benefits of this more modern technology is the **greater range of shapes which can be produced**.
- Designs that can't be **manufactured in one entire piece** with traditional means can easily be achieved.
 - For example, shapes with a scooped out or hollow centre can be produced as a single piece, without the need to weld or attach individual components together.
 - This has the advantage of being stronger than no weak spots which can be compromised or stressed.
- The additive manufacturing process is very quick too, rather than needing an endless round of meetings from engineers in order to be able to tweak designs.
- With the assistance of the software and programming, **making any changes** takes simply the click of the mouse.
- **Rapid prototyping** (type of Additive Manufacturing) in particular is very quick, with full models produced quite literally overnight in some cases. This provides companies with far **more flexibility**, and also has the **result of slashing costs too**.

Results of Successful Utilization of Additive Manufacturing:

- Additive manufacturing (AM) creates opportunities for **improving sustainability**.
- **Opportunities** are being realised across the product and material life cycles.
- AM can **improve resource efficiency** and enable closed-loop material flows.
- Established organisations are focusing on **product and process redesign**.
- **New ventures** are **exploring niches** and growing the AM ecosystem.

Opportunities in India:

- Fortunately, this **manufacturing paradigm** has several features that play to the **strengths of the Indian ecosystem**.
 - First, it **eliminates large capital outlays**. Machines are cheaper, inventories can be small and space requirements are not large. Thus, jump-starting manufacturing does not face the **massive hurdle of large capital requirement** and the traditional small and medium enterprises can easily be adapted and retooled towards high technology manufacturing.
 - Second, the **Indian software industry is well-established**, and plans to increase connectivity are well under way as **part of 'Digital India'**. This would allow for the creation of **manufacturing facilities in small towns** and foster industrial development outside of major cities.

- Third, it is possible to build products that are **better suited for use in harsh environmental conditions**. Products that required assembly of fewer parts also implies that they may be better able to withstand dust and moisture prevalent in our tropical environment and be more durable.
- Fourth, in a country where **use-and-throw is an anathema**, maintaining old products is far easier because **parts can be manufactured as needed and product life-cycles can be expanded**.
- Finally, **maintaining uniform product quality** is far easier because the entire system is built at the same time and assembly is not required.

Conclusion:

- In the past, the **limitations of production** have all too often influenced design, **ruling out ideas** because they weren't practically achievable.
- The introduction of this technology and its development means the process has been spun on its head, with **design now driving the production**.
- If 'Make in India' is to succeed, it needs to **encompass 'Make it the Indian Way'**. It need not emulate **mass production technologies**, fuelled in Detroit by **massive capital investment** or in Beijing by cheap labour.
- We are fortunate to be in a **historic moment** when **the manufacturing sector is about to go through a transformation wrought by disruptive technologies**.
- A **combination of science and art**, with a pinch of **Indian entrepreneurship** thrown in, will allow us to **develop a manufacturing ecosystem** that will not only allow India to compete with global manufacturing, it will also **create products that are uniquely suited to Indian conditions**.
- We have to find a way of making it **work in India's favour** rather than against it.

22. THE POST AND THE PERSON: ON STRENGTHENING THE EC

Context:

- **PIL for creating Independent Mechanism to appoint CEC and ECs:**
- The **Constitution Bench of the Supreme Court** is examining a **public interest litigation (PIL)** that could be **critical for Indian democracy**.
- The PIL, which seeks the **strengthening of the Election Commission of India (ECI)**, includes a proposal to **create an independent mechanism to appoint the Chief Election Commissioner (CEC) and Election Commissioners (ECs)**.
- At present, CEC and ECs are simply appointed by the government of the day, **without any defined criteria or processes**.

Functions of Election Commission in India

1. EC takes decision on every aspect of conduct and control of election from the announcement of election to the declaration of results.
2. It implements the code of conduct and punishes any candidate or party that violates it.
3. It can also order the government to follow some guideline, to prevent use and misuse of governmental power to enhance its chance to win elections, or to transfer some governmental officials
4. When on the election duty, government officers work under the control of the EC and not the government.
5. To give an advice to the President on some certain issues.

Election Commission of India:

- Election Commission of India (ECI) is a **constitutional body under Article-324** vested with the responsibilities of superintendence, direction and control of conduct of elections. It consists of a Chief Election Commissioner and two Election Commissioners.
- **Article 324** states that the Election Commission shall consist of Chief Election Commissioner and such numbers of other Election Commissioners, if any, as the President may from time to time fix and appointment of CEC and other ECs shall, subject to provisions of any law made in that behalf by the Parliament, be made by the President.
- Though the ECI has since become an institution of some authority, there have been **controversies** over appointments of ECs, allegations of partisanship, and new problems such as of voter bribery and paid news, which the ECI has not been able to address so far.

Three critical decisions taken by Constituent Assembly:

- When the Constituent Assembly debated how free and fair elections should be ensured, three important questions arose.
- The first was whether free and fair elections should be made a part of fundamental rights or an independent institution, outside the executive, should be established to conduct the elections.
 - The Assembly opted for the latter and **created the ECI.**
 - **With legal back up and the resources to develop and enforce a transparent electoral system, the ECI made free and fair elections a reality.**
- The second critical decision was to have a single, centralised body for elections to the Lok Sabha and State legislatures.
 - One proposal was that the ECI be confined to federal elections, and separate institutions be set up to conduct elections to State legislatures.
 - However, with **increasing tension among communities**, the Assembly feared partisan action in the States and opted for **a single national institution, the ECI.** The implications of this decision were complex.
 - It was debated whether to have a **single, centralised body for elections to the Lok Sabha and State Legislatures.** One proposal was that ECI be confined to federal elections and separate institutions to be set up to conduct elections to State Legislatures.
 - At that time, the Assembly feared partisan action in the States and **opted for a single national institution.**
- The third question concerned **ensuring the independence of the ECI.**
 - **Independence of the ECI, the manner of appointment of the CEC and ECs was debated.**
 - One member proposed ratification of CEC's appointment by the Legislature, but the Constituent Assembly disagreed and it simply provided for the **CEC to be appointed by the President, leaving it to the Legislature to enact a suitable law.**
 - The Constituent Assembly did provide that the CEC could only be removed through the process that of Supreme Court Judge. For the Election Commissioners, even this safeguard was not provided.

Present Issues that are in Concern with ECI:

- The Election Commission of India (ECI) has sought **complete independence from government control.**
- At present only, Chief Election Commissioner has **security of tenure.** Also, its **budget is not a charged expenditure, but is voted by the Parliament.**
- There should be a **provision** either in law or by some government resolution that the **senior most EC should be automatically elevated as CEC** in order to instil a **feeling of security** in the minds of the ECs and that they **are insulated from executive interference** in the same manner as CEC.
- At present, there is **no specific provision in the law** to this effect and commission has to **resort to extraordinary powers** under **Article 324** of constitution which, it feels should be used sparingly.
- If it is approved by the Law Ministry, the poll panel will be **free to frame its own recruitment rules and shortlist and appoint officers** on its own. It can then also draw competent professionals and experts from the job market.

Way Forward:

- There should be **publicly reprimanded** for politicians for violating the Model Code of Conduct, postponed/ cancelled elections if their credibility was compromised, intensified supervision of elections, and insisted on action against errant officials.
- It has also sought **absolute financial freedom from the Law Ministry.** Like the CAG and UPSC, the ECI wants its budget to be '**charged**' to the **Consolidated Fund** as opposed to the current practice of being **voted and approved by Parliament.**
- ECI has also proposed an **independent secretariat for itself** with which it will not have to depend on DoPT to appoint its officers.
- There is a **need for constitutional protection for all three** of its members as opposed to just one at present. Its two Election Commissioners can be removed by the government on the recommendation of the Chief Election Commissioner.
- The ECI wants **print media to be included in Section 126 of the RP Act.** This section currently prohibits publication of ads by political parties in electronic media (TV, radio) and recently **added social media, 48 hours** before voting ends.

- The ECI sought **amendment to RPA** to include **specific powers** to postpone or countermand polls on the **grounds of use of money power**.

Conclusion:

- ECI has been **ensuring democratic transfer of political power** from one set of representatives to other since independence.
- However, in recent times, it is embroiled in various issues & controversies such as EVM malfunctioning, announcement of election dates to benefit ruling government, money and muscle role in elections etc.
- During the 1996 general election, the **ECI restored the credibility of the election process**. The CEC, T.N. Seshan, reinterpreted the **ECI's role and powers, and provided combative, forceful leadership**.
- As history shows, **inadequate leadership** is the **bane of our public institutions**. Safeguards to ensure that ethical and capable people head them are crucial.

23. GET THE MODEL RIGHT: ON STATE-SPONSORED INSURANCE

Introduction:

- A report by the **World Health Organisation** has shown that around **3.2% of Indians** would fall **below the poverty line** because of **high Out-of-pocket (OoP) health expenditure**.
- **World Bank data, in 2015**, showed that nearly **65% of health-care expenditure in India is "Out of Pocket" (OoP)**.
- Thus, a **national health insurance scheme** like the **Ayushman Bharat** is welcome.

Ayushman Bharat: Government funded healthcare program:

- India takes a giant leap towards providing **accessible and affordable healthcare** to the common man with the launch of **Ayushman Bharat -Pradhan Mantri Jan Aarogya Yojana (AB-PMJAY)**
- Ayushman Bharat – Pradhan Mantri Jan Aarogya Yojana (AB-PMJAY) is a **paradigm shift from sectorial, segmented and fragmented approach** of service delivery through various national and State schemes to a **bigger, more comprehensive and better converged and need based service delivery of secondary and tertiary care**.
- Ayushman Bharat, for instance, has enhanced the Rashtriya Swasthya Bima Yojana (RSBY), to cover around **11 crore families** with a **yearly coverage of ₹5 lakh**.
- Experts estimate this will require **Rs.25,000 crore per year**, when fully implemented.

However, Present Insurance model is flawed?

- Insurance works on **the principle of pooling the risk** of policy holders. If an individual, corporation or a Government can bear a certain quantum of risk by themselves, it is **not financially sensible** to insure with an insurance company.
- This is because **administrative overheads** and **profit margins** of insurance companies are included in insurance premium costs.
- For instance, Last year, **insurance companies** made a **bumper profit of 85%** to the tune of Rs. 15,029 Cr on crop insurance premium under the **Pradhan Mantri Fasal Bima Yojana**.

Costs baring by the insurance companies:

- Typical insurance company costs include
 - Designing insurance products to suit customer needs;
 - Actuarial input to assess and manage risk;
 - Advertising and marketing;
 - Empanelment (of approved service providers such as hospitals);
 - Administrative expenses to provide prior approval of claims; and
 - Processing, which includes functions such as fraud detection.
- However, of these, the **first three are not applicable** to programmes such as Ayushman Bharat which will be fully funded by the government as a blanket scheme.
- The government is also funding **more than 80% of crop insurance**. The last three functions, i.e. empanelling service providers, pre-approving hospitalisation of patients and subsequently settling the claim, are commonly **outsourced to third-party administrators (TPAs)** even by insurance companies.

AYUSHMAN BHARAT Health Cover for All

The union cabinet has approved the Ayushman Bharat-National Health Protection Mission, also known as Modicare, that will provide ₹5 lakh health cover to the poorest 100 million families. Billed as the biggest healthcare scheme of its kind in the world, the government hopes to get it rolling soon.



BENEFITS

₹5 LAKH
health insurance
per family per
year

Will cover
existing diseases

Pre- and post-
hospitalisation
expenses covered

Defined transport
allowance per
hospitalisation

Covers almost all
secondary and
many tertiary care
procedures

Small negative list
of hospitalisation
that's not covered

WHO IS ELIGIBLE

107.4 MILLION
families likely to be eligible

Those identified as
poor and vulnerable

Socio-Economic Caste
Census (SECC) data to
be used

No cap on family size
or age

CLAIM METHOD

- 1 Cashless benefits from any public/ pvt empanelled hospitals
- 2 Private hospitals will be empanelled online based on defined criteria
- 3 Beneficiary can approach any hospital across the country
- 4 NITI Aayog will develop an IT framework for cashless/paperless treatment



Therefore, Best Insurance Model can be Trust model and cost cutting:

- No insurance company has the kind of **financial resources the Centre and the States have.**
- However, in India, governments continue to pay hefty sums in premium to insurance companies.
- Hence, governments must consider bearing the risk by themselves known as the **“trust mode”** instead of using insurance companies as risk-bearers and intermediaries.
- **Case study for Trust Model:** Studying the Aarogyasri scheme introduced in undivided Andhra Pradesh by the late Congress Chief Minister, Y.S. Rajasekhar Reddy (the forerunner of the RSBY).
- They showed that the bid by insurance companies on such health schemes included a 20% margin for administrative expense and profit. **By avoiding insurance companies and using TPAs instead, governments can save about 15%, or up to ₹6,000 crore per year.**
- These savings will continue to rise due to rising premiums. The study also found the **claim-to-premium ratio** and **customer satisfaction** to be **better in the trust mode than the insurance mode.** It would also **prevent exorbitant profits** accruing to insurance companies in good cropping seasons as in 2017-18.

Conclusion:

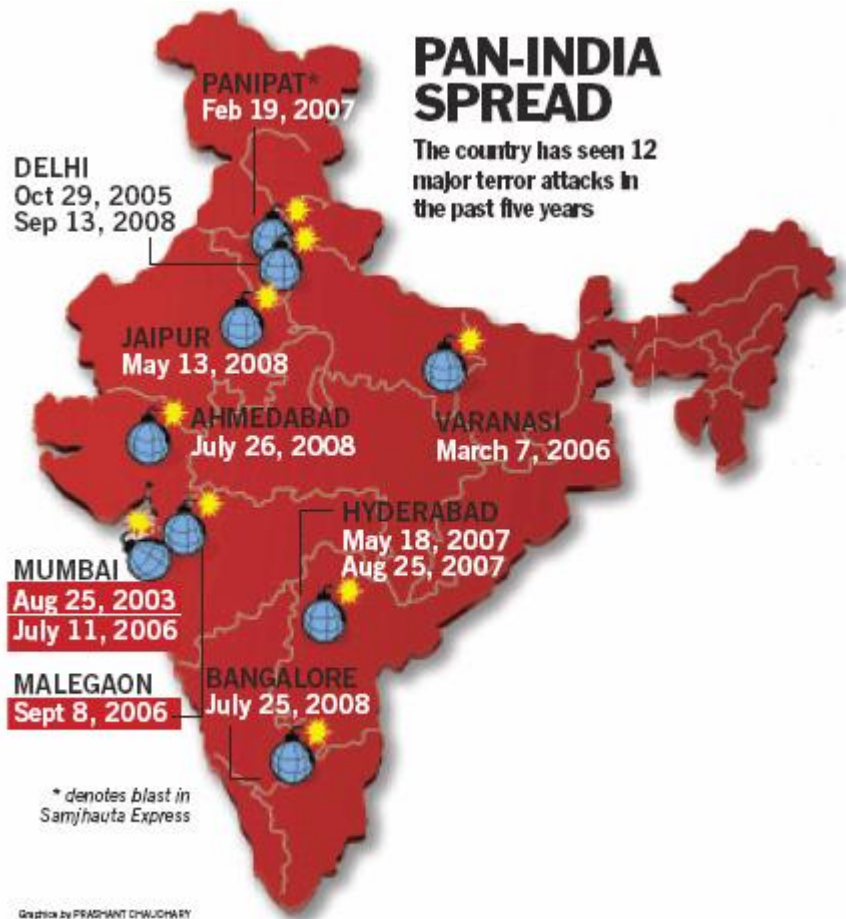
- With **Ayushman Bharat – Pradhan Mantri Jan Aarogya Yojana**, the government is taking **healthcare protection** to a **new aspirational level.**
- This is the **“world’s largest government funded healthcare program”** targeting more than 50 crore beneficiaries.

- The government has already proclaimed that it wishes to **cut the intermediary** through the **JAM trinity (Jan Dhan-Aadhaar-Mobile)** and **direct benefit transfers**.
- It has also indicated that it wants to **optimise fund utilisation** through the recently introduced **Public Finance Management System**.
- Shifting to the **trust mode** will be the next natural step in this path, not only **saving taxpayer money** but also **benefiting farmers and the underprivileged** instead of insurance companies.

24. TEN YEARS AFTER THE MUMBAI ATTACK

Context:

- Ten years ago, Pakistan carried out one of the **most heinous of terror attacks** perpetrated anywhere in the world.
- The **26/11 Mumbai terror attack**, named after the date in 2008 when the attack took place, is in some respects comparable to the September 11, 2001 terror attacks in the U.S. Comparisons with the Madrid train bombings in 2004 and the London bombings in 2005 are.
- From an Indian standpoint, 26/11 Mumbai terror attack, was perhaps for the **first time** that an **operation of this nature** involved Rapid Action Force personnel, Marine Commandos (MARCOS), the National Security Guard (NSG) and the Mumbai Police.



Major Terror Attacks in India:

- India, and Mumbai city, are **no strangers to terror**.
- **In 1993**, over 250 people were killed in Mumbai in a **series of coordinated bomb** explosions attributed to Dawood Ibrahim, reportedly as reprisal for the demolition of the Babri Masjid.
- **In July 2006**, bomb explosions in a number of **suburban trains in Mumbai** killed over 200 people and injured several more.
- The most audacious terror attack till the **26/11 Mumbai terror incident** was the attack on the **Indian Parliament in 2001** by the Pakistan-based terror outfits, Lashkar-e-Taiba (LeT) and Jaish-e-Mohammed (JeM).
- Several of the terror attacks in the 21st century, however, reflect a **paradigmatic change** in the tactics of **asymmetric warfare**, and the **practice of violence**.
- Today's attacks carried out in **different corners of the world** by al-Qaeda and its affiliates, the Islamic State, al-Shabaab, and similar terror outfits, are very different from those witnessed in the previous century.
- The tactics employed may vary, but the objective is common, viz. **achieving mass casualties and widespread destruction**.

Streamlined Indian security after 26/11 attacks:

- In the wake of the terror attack, **several steps** were initiated **to streamline the security set-up.**
 - **Coastal security** was given high priority, and it is with **the Navy/Coast Guard/marine police.**
 - A **specialised agency** to deal with terrorist offences, the **National Investigation Agency**, was set up and has been functioning from January 2009.
 - The **National Intelligence Grid (NATGRID)** has been constituted to create an appropriate database of security related information.
 - **Four new operational hubs** for the NSG have been created to ensure rapid response to terror attacks.
 - The **Multi Agency Centre**, which functions under the Intelligence Bureau, was further strengthened and its activities expanded.
 - The Navy constituted a **Joint Operations Centre** to keep vigil over India's extended coastline.
 - **Financial Intelligence Unit-IND (FIU-IND)** is the central national agency responsible for receiving, processing, analysing and disseminating information relating to **suspect financial transactions.**
 - A special **Combating Financing of Terrorism (CFT) Cell** has been created in the Ministry of Home Affairs in 2011, **to coordinate** with the Central Intelligence/Enforcement Agencies and the State Law Enforcement Agencies for an **integrated approach to tackle the problem of terror funding.**
- Notwithstanding **increased vigil and streamlining of the counter-terrorism apparatus**, the ground reality is that newer methodologies, newer concepts more daringly executed, and **more deeply laid plans** of terrorist groups have made the world a less safe place.

New Forms of Terrorist Attacks and Activities:

- The actual number of terror attacks may have **declined in recent years**, but this does not mean that the situation is better than what existed a decade ago.
- **Terrorism remains a major threat**, and with **modern refinements, new terrorist methodologies and terrorism mutating** into a global franchise, the threat potential has become greater.
 - One **new variant** is the **concept of 'enabled terror' or 'remote controlled terror'**, that is violence conceived and guided by a controller thousands of miles away.
 - Today the **'lone wolf'** is, more often than not, part of a **remote-controlled initiative**, with a controller choosing the target, the nature of the attack and even the weaponry to be used.
 - **Internet-enabled terrorism** and **resort to remote plotting** is thus the new threat.
 - Operating behind a **wall of anonymity**, random terror is likely to become the new terror imperative.
- Terrorists are **motivated by different goals and objectives**. Depending on the objectives of the group/groups, the **nature of terrorism** also differs.

Way Forward: Are we stronger now?

- Dealing with the **menace of terrorism** would require a **comprehensive strategy** with involvement of different stakeholders, the Government, political parties, security agencies, civil society and media.
- There is a need for **National Counter Terrorism Centre**. A **centrally co-ordinated Terrorism Watch Centre**, which could also operate as a think tank with sufficient inputs from academic and private experts.
- The previous Government conceived **National Counter Terrorism Centre** to centrally focus on myriad developments in terrorism.
- A strategy for fighting terror in India has to be evolved in the **overall context of a national security strategy**. To tackle the menace of terrorism, a **multi-pronged approach** is needed.
- **Socio-economic development** is a priority so that **vulnerable sections** of society do not fall prey to the propaganda of terrorists promising them wealth and equity.
- There are no ready-made answers to this new threat. **Vigilance is important**, but remaining **ahead of the curve** is even more vital.

25. LEAVE THEM ALONE: ON THE SENTINELESE**Context:**

- An American is reported to have been killed with arrows by the tribal people of a **restricted island of Andaman.**

- The Sentinelese people who live in the **small forested island** are known to resist all contact with outsiders, often **attacking anyone who comes near**.



Map locating North Sentinel Island where an American missionary killed by a tribe of hunter-gatherers on Wednesday.

Sentinelese, a Negrito tribe in North Sentinel Island:

- The **Sentinelese, a negrito tribe** who live on the **North Sentinel Island** of the Andamans, have not faced incursions and remain hostile to outsiders.
- The inhabitants are connected to the **Jarawa** on the basis of physical, as well as **linguistic similarities**.
- Based on **carbon dating of kitchen middens** by the **Anthropological Survey of India**, Sentinelese presence was confirmed in the islands to **2,000 years ago**. Genome studies indicate that the Andaman tribes could have been on the islands even 30,000 years ago.
- The Sentinelese are **pre-Neolithic people**, who have inhabited North Sentinel Island for an estimated 55,000 years, without contact with the outside World.
- The Sentinelese and other aboriginal tribes are protected under the **“Andaman and Nicobar Protection of Aboriginal Tribes Regulation, 1956”**.
- Having **lived in isolation** in an island in the Bay of Bengal for thousands of years, the Sentinelese have **no immunity or resistance** to even the commonest of infections.
- They are **short statured** possibly due to the **“island effect”** that **causes genetic limitation over time**.
- **Various degrees of protection** are in place for the indigenous people of A&N Islands, but it is complete in the case of the Sentinelese.

How are they protected?

- The Govt. of India issued **the Andaman and Nicobar Islands (Protection of Aboriginal Tribes) Regulation, 1956** to declare the traditional areas occupied by the **tribes as reserves**, and **prohibited entry of all persons** except those with authorisation.
- **Photographing or filming** the tribe members is also **an offence**. The rules were amended later to enhance penalties. But restricted area permits were relaxed for some islands recently.
- The Sentinelese are perhaps the **most reclusive community** in the world today. Their language is so far understood by no other group and they have traditionally guarded their island fiercely, **attacking most intruders** with spears and arrows.
- Arrows were fired even at a **government aircraft** that flew over the island after the 2004 Tsunami.

Particularly Vulnerable Tribal Groups (Pvtgs):

- The **Ministry of Tribal Affairs** is implementing a scheme namely **“Development of PVTGs”** which covers the 75 identified PVTGs among Scheduled Tribes in 18 States / UT of Andaman & Nicobar Islands.
- Priority is also assigned to PVTGs under the schemes of **Special Central Assistance (SCA) to Tribal Sub-Scheme (TSS)**, Grants **under Article 275(1)** of the Constitution, Grants-in-aid to Voluntary Organisations.

Criteria was Categorized by Ministry of Home Affairs:

- A pre-agriculture level of technology.
- A stagnant or declining population.
- Extremely low literacy.
- A subsistence level of economy.
- This is despite laws like the Andaman and Nicobar Protection of Aboriginal Tribes Regulation (1956). There is a **Andaman Adim Janjati Vikas Samiti**, a special policy for Jarawas framed in 2004 and a **dedicated Protection Police**.

Declining Immunity of tribal resulted in their declining population:

- A large chunk of the population of the **10 Great Andamanese tribes** was wiped out after the indigenous peoples **caught syphilis, measles, and influenza** on an epidemic scale following contact with the early settlers.
- **Between 1998 and 2004**, when the Jarawa started to respond to the state, all government hospitals bordering their reserve opened special wards to treat them for infections.
- The government gave up in the mid-1990s, and in order to **safeguard their health and sovereignty**, decided that **no one could enter a 5-km buffer zone** around their island, which was already out of bounds.
- There are **more than 100 uncontacted tribes** around the World and most of them are in **Amazon forest of South America** and **New Guinea, an island off Australia**.

Conclusion:

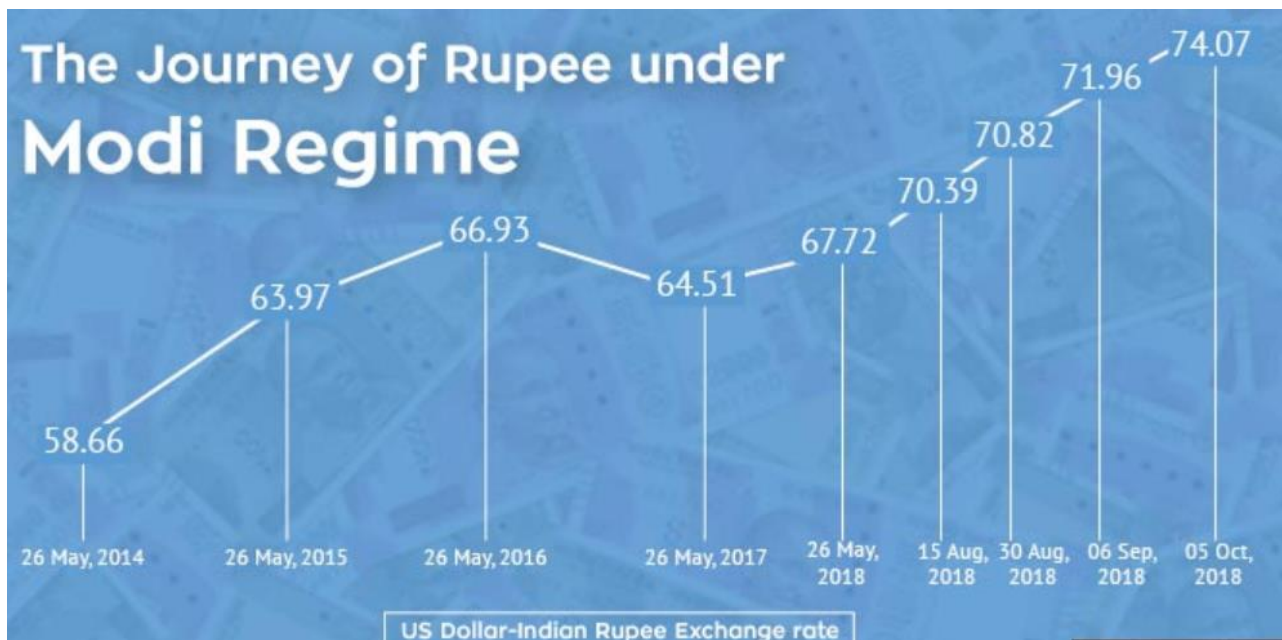
- **North Sentinel Island** was a protected area and **not open to tourists**. “The exact population of the tribe is not known, but **it is declining**. The government has to protect them.”
- **Poachers** are known to **fish illegally in the waters** around the island, catching turtles and diving for lobsters and sea cucumbers.
- Various degrees of protection are in place for the **indigenous people of A&N Islands**, but it is complete in the case of the Sentinelese. The administration enforces **“an ‘eyes-on and hands-off’ policy** to ensure that no poachers enter the island”.

Way Forward:

- As President Pranab Mukherjee said in 2014, it is the job of the Indian state **“to protect them in their own environment and in their own circumstances”**.
- It is also an lesson for the country to embrace its **human heritage in all its diversity**, and to empathetically try to see the world from the eyes of its **most vulnerable inhabitants**.
- The Prime Minister’s forthcoming visit to the Andaman and Nicobar Islands and the announcement of new projects for **“holistic” development take a context-sensitive “island view” of development** and recognise settlers and PVTGs as **equal stakeholders** in a **common sustainable future**.

26. BREATHING SPACE: ON THE STRENGTHENING RUPEE**Introduction:**

- **Rupee strengthens little with softer oil, fund flows:**
- **Softer crude oil prices**, along with **foreign fund inflows**, helped the rupee post over 1% gain against the dollar, giving hope for the **current account deficit to remain within the tolerance limit** and for a further reduction in petrol and diesel prices.
- This is no surprise since **imported oil meets about 80% of India’s total demand**. The **value of the rupee** tanked amid the **uptrend in oil prices** which lasted till early October.
- Fuel prices across major Indian cities have fallen significantly in the last few weeks.



Indian Scenario:

- **India has 0.5% of the oil and gas resources** of the world and **15% of the world's population**. This makes India heavily dependent on the import of the crude oil and natural gas.
- **India is the fourth-largest Liquefied Natural Gas (LNG) importer** after Japan, South Korea and China, and accounts for 5.8 per cent of the total global trade.
- India the **third-largest oil consuming nation** in the world and India's oil consumption grew 8.3 per cent year-on-year to 212.7 million tonnes in 2016, as against the global growth of 1.5 per cent.

Impact of fall in Crude oil prices on Economy:

- The **fall in global crude oil prices** comes as a big relief to the Central government, which has faced **increasing macroeconomic** and political pressure due to rising prices.
- According to **UBS**, a **drop of \$10** in the price of oil can **improve India's current account and fiscal deficits by 0.5% and 0.1% of GDP**, respectively.
- The Reserve Bank of India will be relieved as it will have to worry less **about the rupee and oil-induced inflation**.
- This points to an **increase in investor confidence** in the economy as the fundamentals improve.
- But rising global uncertainties, it may not be so easy to map what lies ahead for global crude oil prices and the rupee.
- The **December 6 meeting** of the **Organisation of the Petroleum Exporting Countries** will make clear the response of oil producers to the **sharp fall in prices**.
- Shale companies are also likely to respond to falling prices **by cutting production**; the **profit break-even point** for shale producers.

Rising oil prices could take a bite out of India's economy:

- Rebounding oil prices have pushed up **oil import costs** and will **widen India's currency account deficit**. This will in turn weigh on the rupee, which is expected to depreciate further.
- That widening deficit will result in a **weakening rupee**, as more imports mean India has to buy **more foreign currencies** to meet its needs.
- **India could overtake China as the world's largest oil demand growth center by 2024, according to a Wood Mackenzie report.**
- **Crude Oil Demand** is expected to grow by **3.5 million barrels per day from 2017 to 2035**, accounting for a third of global oil demand growth. That's driven by rising income levels, a **growing middle class** and increasing **need for mobility**.

Will rupee strengthen?

- As the dollar is strengthening and all accompanying fundamentals are strong, it looks difficult.
- There are **three important elements linked to the weak rupee**:
 - Persistent current account deficit;
 - Episodes of net capital outflow in terms of speculative and debt capital outflow; and
 - Predominance of debt capital in forex reserves.
- In the event of **rupee depreciation**, the RBI intervenes in the forex market with the **objective of containing volatility**.
- This decline could be on account of the **RBI selling dollars** to intervene in the market to **manage rupee volatility**.
- However, our efforts to **further strengthen FDI** and **promote exports** by diversification, improving the quality of our commodities, and focussing more on developing and emerging market economies will be helpful.
- That is the only **long term sustainable** and **viable way to prevent the rupee from falling**.

Conclusion:

- Oil prices have shot up this year, and are set to go up further **when sanctions on Iran kick in**.
- While currency dealers said the Reserve Bank of India was not present in the market, the **strengthening of the rupee** gave an **opportunity to boost foreign exchange reserves**.
- The total **foreign exchange reserves** for the end of November 9 were **\$393 billion**, down by \$33 billion since its peak in April this year.

Way Ahead:

- Government should focus on making **strategic reserve storage facilities** now as Gulf Countries are looking towards tapping the **Indian oil demand** due to low import demand from America owing to availability of shale gas at cheaper rate.
- Moreover, **Oil Corporation of Gulf Countries** have shown interest in **storage-refining in India** since it can reduce their transport costs into Southeast Asia.
- In future, Government may **readily utilise this storage facility** in the international markets as it can release inventory and book profits when prices climb, and recharge reservoirs when prices fall again.
- India should look at using **renewable energy to meet multiple objectives by increasing production**: energy security, energy efficiency, decarbonization, and sustainability, among others.
- India should capitalise on the relief offered by the **fall in oil prices to improve its preparedness for any future jump in oil prices**.

RSTV, LSTV, AIR - SYNOPSIS

1. BIODIVERSITY REPORT

Link: https://youtu.be/fGu4T8_ambQ

(TOPICS COVERED:

PRELIMS – GENERAL ISSUES ON ENVIRONMENTAL ECOLOGY, BIODIVERSITY AND CLIMATE CHANGE

MAINS- GENERAL STUDIES III – BIODIVERSITY, ENVIRONMENT)

- The **Living Planet Report, 2018** by **World Wildlife Fund for Nature (WWF)** presents a grim picture of the **impact human activity** has on the world's wildlife, forests, oceans, rivers and climate. It is felt that the world has begun a "**sixth mass extinction**," but it will be the first caused **by a species – humans**.

LIVING PLANET REPORT

- It is published every **2 years** by **WWF**, first published in
- It is based on the '**Living Planet Index**' and '**Ecological footprint calculations**'.
- The '**Living Planet Index**' is an indicator of the **state of global biological diversity** managed by **Zoological Society of London (ZSL)** and **WWF**.
- **Ecological footprint** is the **biologically productive area needed** to provide for everything used by people: fruits and vegetables, fish, wood, fibres, absorption of CO₂ from fossil fuels use, and space for buildings and roads. It is currently developed by **Global Footprint Network** (an independent think-tank). The **GHG footprint and carbon footprint** are a component of Ecological Footprint.
- Humanity's Ecological Footprint for 2014 was 1.7 planet Earth's. This meant that humanity's demands were 1.7 times faster than what the Earth's ecosystems renewed.
- It is a **science-based analysis** on the **health of Earth** and the **impact of human activity**.
- The **2018 report** has found a **decline of 60% in population sizes of vertebrate species** from 1970 to 2014. The **tropics of South and Central America** had an 89% loss compared to 1970.
- Issues like **Ocean acidification, loss of corals, increasing Carbon** in the atmosphere, **species disappearance** due to habitat loss and degradation, etc are highlighted in the 2018 report.
- **Increasing use of plastics** that ultimately **reaches the oceans and seas** via rivers is also a cause for deaths of **marine organisms**.
- The latest report calls for **new goals post-2020** alongside **Convention on Biological Diversity**, the **Paris Climate Agreement** and the **Sustainable Development Goals**.



WORLD WILDLIFE FUND FOR NATURE (WWF)

- It is an **international non-governmental organisation** founded in
- It works in the field of the **wilderness preservation**, and the **reduction of the human impact on the environment**.
- It has its **Headquarters in Switzerland**.
- Other notable global environmental organisations are the **United Nations Environment Programme (UNEP)**, the **International Panel on Climate Change (IPCC)**, **Greenpeace** and the **Friends of the Earth**.
- **Earth Hour** is a movement **organized by WWF** annually to **turn off non-essential lights** for 1 hour on a space day.

WILDLIFE PROTECTION ACT, 1972

- It is an **Act of Parliament of India** enacted for **protection of plants and animal species**.
- It extends to whole of India except **Jammu & Kashmir**.
- It has **6 schedules** which give **varying degree of protection**.
- **Various other Acts** like **Air Act (1981)**, **Environment Protection Act (1986)**, **Biological Diversity Act (2002)**, **National Green Tribunal Act (2010)**, etc have been enacted in subsequent years in India which aim at protecting the overall environment.

CONCLUSION

- **Human civilization** in its thirst for progress has seen **many developments** starting from the Stone Age. But the process has also resulted in reckless **destruction of environment** on this living planet – Earth.
- This is highlighted in the Living Plant Report, 2018 and various measures need to be taken and followed up by individuals, nations and intergovernmental organisations to **protect the environment on Earth**.

QUESTIONS

(PRELIMS 2014)

(Q) Consider the following statements regarding 'Earth Hour'

1. It is an initiative of **UNEP** and
2. It is a movement in which the participants **switch off the lights for one hour** on a certain day every year.
3. It is a movement to raise the **awareness about the climate change** and the need to **save the planet**.

Which of the statements given above is / are correct ?

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

(PRELIMS 2017)

(Q) In India, if a species of tortoise is declared protected under Schedule I of the Wildlife (Protection) Act, 1972, what does it imply ?

- a) It enjoys the same level of **protection as the tiger**
- b) It **no longer exists in the wild**, a few individuals are under captive protection; and now it is impossible to prevent its extinction.
- c) It is **endemic to a particular region** of India.
- d) **Both (b) and (c)** stated above are correct in this context.

(PRELIMS 2018)

(Q) The term "sixth mass extinction/sixth extinction" is often mentioned in the news in the context of the discussion of

- a) Widespread **monoculture practices in agriculture** and large-scale **commercial farming with indiscriminate use of chemicals** in many parts of the world that may result in the **loss of good native ecosystems**.
- b) Fears of a **possible collision of a meteorite with the Earth** in the near future in the manner it happened 65 million years ago that caused the **mass extinction of many species** including those of dinosaurs.
- c) Large scale **cultivation of genetically modified crops** in many parts of the world and promoting their cultivation in other parts of the world which may cause the disappearance of good native crop plants and the **loss of food biodiversity**.
- d) **Mankind's over-exploitation/misuse** of natural resources, fragmentation/loss of natural habitats, destruction of ecosystems, pollution and global climate change.

2. MANEATERS OF INDIA

Link: <https://youtu.be/RaNRIY3vDrE>**(TOPICS COVERED:****PRELIMS: GENERAL ISSUES ON ENVIRONMENTAL ECOLOGY, BIODIVERSITY****MAINS: GENERAL STUDIES III – BIODIVERSITY & ENVIRONMENT)**

- A reportedly man-eater tigress named Avni or T1 was recently killed in October 2018 after a trail over 3 months by over 200 men with sniffer dogs, drones and trap cameras.
- The hunt also became a controversial topic as conservation of tigers is felt very important. For **conservation of tigers** in India, various measures have been taken by the Government over past few decades.

NATIONAL TIGER CONSERVATION AUTHORITY (NTCA)

- It was established in **December 2005** by a recommendation of the **Tiger Task Force**.
- It aimed at reorganised management of **Project Tiger**.
- It was formed by an **Amendment in year 2006 in the Wildlife Protection Act, 1972** (enacted for protection of plants and animal species) making it a **statutory body**.
- NTCA is under the chairmanship of the **Minister for Environment and Forests**.
- It has 8 expert members, 2 members elected by Lok Sabha (LS) and 1 by Rajya Sabha (RS). The Inspector General (Forests), in charge of Project Tiger, is the ex officio member secretary. (**NTCA = 8 experts + 2 LS + 1 RS + IG Forests**)
- The Authority lays down **standards and guidelines** for **tiger conservation** in the **Tiger Reserves, National Parks and Sanctuaries**.
- It provides **information on protection measures** including future conservation plan, tiger estimation, patrolling, etc.
- It facilitates and supports **tiger reserve management** through **eco-development and people's participation**.
- **Safeguards** for ensuring the agriculture, livelihood, etc of **people living inside a forest** or in and around a tiger reserve have been provided. The **core and buffer areas** are explained to avoid ambiguity.

**PROJECT TIGER**

- It was **launched in 1972** by the Government of India.
- To **protect and improve the tiger population** in India, it has supported an intensive program of **habitat protection and rehabilitation**.
- A **Tiger Protection Force** has been set up to **combat poachers**.
- **Villagers are relocated** to minimize human-tiger conflicts.
- **All India tiger estimation** is done once in every 4 years. The assessment is done using camera traps in a statistical framework based on the approval of Tiger Task Force.
- **Smart patrolling protocols** like **M-STriPES** (Monitoring System for Tigers Intensive Protection and Ecological Status) that uses **GPS (Global Positioning System)** devices, software and **Geographical Information System (GIS)** is also used in some reserves.

TIGER RESERVES OF INDIA

- There are **50 tiger reserves in India** like Jim Corbett (Uttarakhand), Kanha (Madhya Pradesh), Periyar (Kerala), Namdapha (Arunachal Pradesh), etc.
- These reserves are **governed by Project Tiger** which is **administered by the NTCA**.
- India has 70% of tigers in the world.
- Population of tigers in India
 - At turn of 20th century = 1,00,000 tigers
 - Year 2006 = 1411 tigers
 - Year 2010 = 1706 tigers
 - Year 2014 = 2226 tigers
- Thus, tiger population in **last century declined rapidly** due to reasons like poaching. **Later, Project Tiger helped** in proper counting and increase in their population.
- The increase in tiger population in recent years indicates **tiger reserves have maintained viable populations**. But, there is **need for wildlife corridors** to allow tigers to move between source sites.
- It is important to save tigers as they are **terminal consumers in the ecological food pyramid**. Their conservation results in the **conservation of all trophic levels** in the ecosystem.

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA (CITES):

- It is a **multinational treaty** to protect **endangered plants and species**.
- It was drafted as a result of **resolution adopted in 1963 at a meeting of IUCN** and came into **force in 1975**.
- Although **CITES is legally binding**, it does not take the place of national laws.

- CITES secretariat is administered by UNEP which works closely with **NGOs like TRAFFIC** is a **wildlife Trade Monitoring Network** founded in **1979 by WWF and IUCN**. It ensures that **trade in wild plants and animals is not a threat to the conservation of nature**.
- It has played a crucial role in improving **international efforts for tiger conservation**.
- It has put efforts to **ban the trade of tigers**.

CONCLUSION:

- **Tiger populations** which **once ranged widely across Asia**, has lost 93% of its historic range over the past 100 years. Its **population has declined rapidly** (from about 1 lakh at the start of the 20th century to estimated 3,890 worldwide) due to reasons like **habitat destruction, habitat fragmentation and poaching**. It has been classified as **endangered in the IUCN Red List**.
- Internationally, **bodies like CITES and TRAFFIC** have put their efforts for conservation of tigers. **In India, initiatives like Project Tiger** are important and efforts must be continued to improve their population further to **conserve the ecological pyramid**.

QUESTIONS**(PRELIMS 2017)**

- (Q)** The term '**M-STripES**' is sometimes seen in news in the context of
- a) Captive breeding of **Wild Fauna**
 - b) Maintenance of **Tiger Reserves**
 - c) Indigenous **Satellite Navigation** System
 - d) Security of **National Highways**

(PRELIMS 2015)

- (Q)** With reference to the **IUCN and CITES**, which of the following statements **is/are correct?**
1. IUCN is an organ of the United Nations and CITES is an international agreement between governments.
 2. IUCN runs thousands of field projects around the world to better manage natural environments.
 3. CITES is legally binding on the states that have joined it, but this convention does not take the place of national laws.

Select the answer

- a) Only 1
- b) 2 and 3
- c) 1 and 3
- d) 1,2 and 3

(PRELIMS 2017)

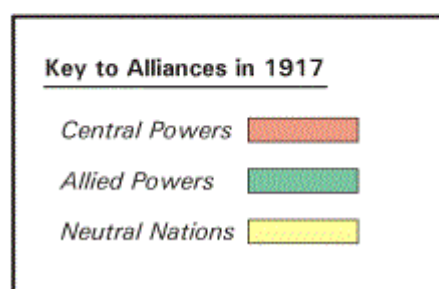
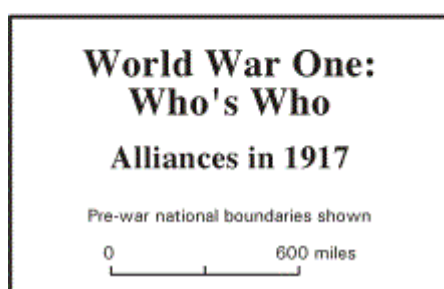
- (Q)** Consider the following statements in respect of Trade Related Analysis of Fauna and Flora in Commerce (**TRAFFIC**)
1. TRAFFIC is a bureau under United Nations Environment Programme (UNEP)
 2. The mission of TRAFFIC is to ensure that trade in wild plants and animals is not a threat to the conservation of nature.

Which of the above statements **is/are correct?**

- a) Only 1
- b) Only 2
- c) Both 1 and 2
- d) Neither 1 nor 2

3. INDIAN ARMY IN WORLD WAR ONELink: <https://youtu.be/dMbs8KkVmpl>**(TOPICS COVERED:****PRELIMS – HISTORY OF INDIA****MAINS – GENERAL STUDIES I – WORLD WARS)**

- **World War I** was a 'Great War'. From **1914 to 1918** it **embroiled various regions** like most of the nations of Europe (France, Great Britain, Germany, etc), the middle East, Russia and from 1917 the United States. The '**Central powers**' (Germany, Austria-Hungary and Turkey) were **defeated against the 'Allies'** (France, Great Britain, Russia, Italy, Japan and United States). WW I was one of the **greatest watersheds of the 20th century geopolitical history**. It led to the **fall of 4 great imperial dynasties** (Germany, Russia where Bolshevik revolution was triggered, Austria-Hungary and Turkey) and **destabilised European society**. **Seeds of World War II** were also sown.
- The war also saw the role of **Indian Army that battled distinctly** at a time when **India was under the British colonial rule**.



INDIAN ARMY DURING WW I

- **Indian Army** contributed in large numbers and distinctly to the **European, Mediterranean and the Middle East** theatres of war in WW I. Their contribution in the victory of Allied powers was vital.
- Indian Army was taken in the WW I by British rule without consulting the Indian leaders. Indians fought in the war hoping that they may be awarded with independence after the war ends.
- **Over 1 million Indians served overseas** (of whom above 70,000 died and another 67,000 were wounded).
- India also supplied **various equipment, materials and animals** required during the war.
- The Indian Army served in **France, Belgium, Mesopotamia, Egypt, Sinai, Gallipoli, etc.**
- The **Indian Army fought against the German Empire** in **German East Africa** (a German colony in the African Great Lakes region) and on the **Western Front**.

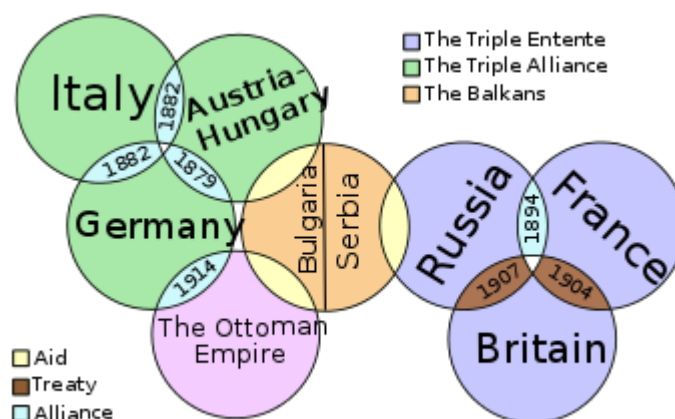
- **Western Front** was opened by **Germany** by invading **Luxembourg and Belgium** which bordered **France**. It became a **main theatre of WW I** and saw many attacks **between 1915 and 1917**.
- After the **war ended officially** (by the signing of **TREATY OF VERSAILLES on 28 June 1919**), India was denied its promise of self-rule. Instead the **British imposed the ROWLATT ACT in 1919** that effectively authorized the government to **imprison any suspected person for up to 2 years without a trial**.

TIMELINE OF ARMY IN INDIA DURING BRITISH RULE

- **1774 – 1895:** The '**PRESIDENCIES ARMY**' were the armies of three presidencies of the East India Company's rule in India.
 - **Presidencies Army = Bengal Army + Madras Army + Bombay Army**
 - They were engaged in wars to extend British control in India (**Mysore, Maratha and Sikh Wars**) and beyond (**Burma, Afghan and Opium Wars**)
 - The **Crown took over** the Presidencies Army **after the Indian Rebellion of 1857**.
 - By **QUEEN VICTORIA'S PROCLAMATION OF 1858** Indian administration was to be placed under the British crown. Also, the annexation of Indian states by Doctrine of Lapse was renounced.
- **1895 – 1902:** '**INDIAN ARMY**' (or **BRITISH INDIAN ARMY**) had a formal existence raised by the Government of India that **included British and Indian sepoy units**. In 1895, the **three 'Presidencies Army' were merged** into the 'Indian Army'.
 - **Indian Army = Northern + Southern + Eastern + Western commands**
 - They were engaged in **both the World Wars**.
- **1903-1947:** Following the '**Kitchener Reforms**',
 - **Army of India = British Indian Army + British Army in India**
 - British Army in India consisted of British Army units posted to India for a tour of duty.

TIMELINE OF WORLD WAR I

- 28 June 1914: **Archduke Franch Ferdinand**, the heir to the throne of **Austria-Hungary** was **killed by a Serbian man**.
- Austria-Hungary declared war on Serbia
- **Russia got involved** (as Russia had an alliance with Serbia).
- **Germany then declared war on Russia** because Germany had an alliance with Austria-Hungary. German troops also entered neutral Belgium and Luxembourg (at the **Western Front**)
- 4 August 1914 – **Britain declared war on Germany** (because of its invasion of neutral Belgium).
- 10 October 1914 – The **Indian Army joins** the war (with the Allies in France)
- 25 April 1915 – Australian, New Zealand, British, French and Indian troops suffer a defeat at
- 1915 and 1916 – Several wars are fought between Britain + France and Germany.
- 6 April 1917 – **America enters** the war
- 8 November 1917 – Russian revolution; **Russia leaves the war**
- 11 November 1918 – **Armistice** (Germany agrees to withdraw its forces from France and Belgium)
- 1919 – **Treaty of Versailles** imposes harsh terms on Germany forcing them to accept the blame for the war and pay huge reparations. This Treaty later became a major cause for World War II.



CAUSES OF WW I:

- **ALLIANCES:** Forming of **mutual defence alliances** between nations.
- **IMPERIALISM:** Desire for greater empires
- **MILITARISM:** Colonial rivalry had led to a naval arms race between Britain and Germany
- **NATIONALISM:** Countries wanted to be better than each other.

CONCLUSION

- The **World War I** was a **very costly affair** that led to use of **various new weapons** in war (tanks, submarines, U-boats, poison gas, aeroplanes and long-range artillery) and **high number of**

- casualties. Downfall of monarchies in Germany, Turkey, Austria-Hungary and Russia occurred. USA emerged as a superpower and Japan became a powerful country in Asia.
- The tough restrictions imposed on Germany after WW I became a major cause for another World War. Thus, **the race for power and growth engaged the world in such great powers** which shall be prevented from occurring to save the **high number of losses they ultimately lead to.**

QUESTIONS**MAINS 2015**

(Q) To what extent can **Germany** be held **responsible for causing the two world wars?**
Discuss critically.

PRELIMS 2015

(Q) What was/ were the object/objects of **Queen Victoria's proclamation (1858)?**

1. To disclaim any intention to annex Indian states.
2. To place the Indian administration under the British crown.
3. To regulate East India company's trade with India.

Select the correct answer using the codes given below

- a) i and ii
- b) Only ii
- c) i and iii
- d) All of these

PRELIMS 2015

(Q) The **Partition of Bengal** made by Lord Curzon in 1905 **lasted until**

- a) The **First World War** when Indian troops were needed by the British and partition was ended.
- b) **King George V** abrogated **Curzon's Act** at the Royal Durbar in Delhi in **1911**
- c) **Gandhiji** launched his **Civil Disobedience movement**
- d) The **Partition of India in 1947** when East Bengal became East Pakistan.

PRELIMS 2012

(Q) The **Rowlatt Act** aimed at

- a) Compulsory **economic support** to war efforts
- b) **Imprisonment without trial** and summary procedures for trial
- c) Suppression of the **Khilafat movement**
- d) Imposition of **restrictions on the freedom of press**