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GS Paper III

Science and Technology, Economic Development, Bio-diversity, Environment, Security and Disaster Management

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FARM LOAN WAIVER

Context: There is rising farm distress which has prompted many states to look for alternatives to provide relief to farmers, with many chief ministers announcing loan waivers and some implementing major schemes.

What is it?

When there is a poor monsoon or natural calamity, farmers may be unable to repay loans. The **rural distress** in such situations often prompts States or the Centre to offer relief — reduction or complete waiver of loans. Essentially, the Centre or States take over the liability of farmers and repay the banks. Waivers are usually selective — only certain loan types, categories of farmers or loan sources may qualify. For instance, in 2008, crop loans and investment loans were waived for marginal and small farmers (those with less than 2 hectares of land ownership); other farmers were only given a 25 per cent reduction.

Why is it important?

Agriculture in India has been facing many issues — fragmented land holding, depleting water table levels, deteriorating soil quality, rising input costs, low productivity. Add to this vagaries of the monsoon. Output prices may not be remunerative. Farmers are often forced to borrow to manage expenses. Also, many small farmers not eligible for bank credit borrow at exorbitant interest rates from private sources. When nature rides roughshod over debt-ridden farmers in the form of erratic monsoon and crop failures, they face grim options. Indebtedness is a key reason for the many farmer suicides in the country. Loan waivers provide some relief to farmers in such situations.

Points in Favor of Farm Loan Waiver

- Rising costs, drop in income and increasing incidence of indebtedness among small and marginal farmers manifested in a spate of suicides over the years. Until policies are not tweaked in favour of farmers to address their risks related to production, weather-disaster, price, credit and market, the loan waiver will become a periodical instrument for temporary relief.
- There are two key facets of the farmers' crisis – falling income and indebtedness. As per NABARD's All India Rural Financial Inclusion Survey, the major sources of income for farmers are cultivation, wages (as labourers) and other allied activities. Data show that the monthly income of agricultural households from cultivation remained almost constant during the last four to five years (Rs 3,081 in 2012-13 and Rs 3,140 in 2016-17).
- Firms have always received debt waivers, though they are tactfully termed as "loan restructuring" or "one-time settlements". Just as for firms, farms also need a reduction of debt burden, followed by a fresh infusion of credit, when their economic cycle is on a downturn.

Points Against Farm Loan Waiver

- Loan waiver helps a minority and excludes landless. That is because it benefits only those farmers who have taken loans from institutional sources. Last NSSO survey of 2013 showed 52% of agriculture households were indebted but only 60% of those had taken loans from institutional sources. This means, only 31% agriculture households (60% of 52% indebted households) are likely to benefit from loan waiver.
- Loan waivers have "reputational consequences"; that is, they adversely affect the repayment discipline of farmers, leading to a rise in defaults in future.
- Earlier debt waiver schemes have not led to increases in investment or productivity in Agriculture.
- After the implementation of debt waiver schemes, a farmer's access to formal sector lenders declines, leading to a rise in his dependence on informal sector lenders; in other words, waivers lead to the shrinkage of a farmer's future access to formal sector credit. This is because, after every waiver, banks become conservative in issuing fresh loans to beneficiaries, as they are perceived to be less creditworthy.

- It also increases the NPAs (Non-Performing Assets) of banks.
- For the government, loan waivers not only increase the fiscal deficit and interest burden but also limit its ability to undertake productive capital expenditure in the agriculture sector which affects the long-term growth in the sector.So far, loans amounting to over Rs 1.5 lakh crore has been waived off.

Other Measures To Address Farm Distress

1. Reducing costs:
    - Establishing the nation-wide soil health card scheme, neem-coated urea is an important aspect as it will reduce the usage of fertilizers and enhance nitrogen use efficiency.
    - Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) is a very important scheme to ensure proper water management in agriculture practices.
    - Direct cash transfer is a better option than debt relief to incentivise the farmer and enable them to meet pre-operative expenses - and is proactive rather than reactive in nature
    - Returns on cultivation should be ensured through an appropriate minimum support price (MSP) on farm products and/or reducing input costs. There has been a demand to raise the MSP of all commodities to 1.5 times the cost – as recommended by the Swaminathan Committee.

2. Generating employment opportunities
    - The Situation Assessment of India reported that more than 40 percent of farmers would like to quit agriculture if alternative opportunities were available.
    - In addition to farming, the government should emphasize on livestock, fisheries and development of water bodies. E.g: The Rashtriya Gokul Mission. This will benefit a lot of small and marginal farmers, including landless agriculture labourers who possess these indigenous species.
    - Investment in agriculture and allied sector will help in employment generation. Government in budget 2019 also said that it will invest in a big way in developing infrastructure in both agriculture and allied farm sector, and encourage private entrepreneurs in food processing.

3. Reducing risks in agriculture
    - Provide insurance coverage and financial support to the farmers in the event of failure of any of the notified crop as a result of natural calamities, pests & diseases. Pradhan Mantri Fasal Bima Yojana is a good start but it should be implemented carefully and all the issue must be resolved soon.
    - Encourage farmers to adopt innovative and modern agricultural practices.
    - Ensure the flow of credit to the agriculture sector.

4. Developing agri-infrastructure
    - Agri-infrastructure—including agricultural markets, cold storage, warehouses, and agro-processing—has not developed in corresponding speed with rising agricultural production.
    - There are no proper warehousing facilities which force the farmers to sell the produce at the prevailing low prices. So providing enough storage facilities, irrigation facilities, electricity should be the focus.
    - PM Kisan SAMPADA Yojana is a comprehensive package which will result in the creation of modern infrastructure with efficient supply chain management from farm gate to retail outlet. It will not only provide a big boost to the growth of food processing sector in the country but also help in providing better returns to farmers and is a big step towards doubling of farmers income, creating huge employment opportunities especially in the rural areas, reducing wastage of agricultural produce, increasing the processing level and enhancing the export of processed foods.

5. Improving the quality of rural life
    - Rural India is still missing basic amenities (including sanitation, hygiene, drinking water, drainage, schooling, and health centres).
    - PM Gram Sadak Yojana, Swachh Bharat Abhiyan etc should be more aggressively taken.

- UBI and Farm distress: Unlike farm loan waivers, universal basic income does not impair credit culture and, unlike farmer-specific transfers, does not seek to tie down people to farming. Compared to a farmer-centric scheme, universal basic income holds greater appeal as it does not discriminate based on occupation or land ownership, and does not depend on accuracy of targeting to work. But the challenge with universal basic income is the prohibitive costs associated with it. A better version of support to farmers is schemes like Rythu Bandhu Scheme of Telangana and KALIA (Krushak Assistance for Livelihood and Income Augmentation) scheme by the Odisha government as they provide income support to farmers.

6. Market Reforms

- Amendments in APMC Acts: APMC Act should be amended to allow for direct marketing and the establishment of agricultural markets by the private and cooperative sector to provide more efficient marketing and creating an environment conducive to private investment.
- Appointment of an agricultural commission consisting of all stakeholders to look comprehensively into all aspects of farming.
- Grouping farmers into Farmer Producer Organizations (FPOs) could facilitate improved market access and better bargaining capacity.
- Commodity options (rights to buy or sell) in agricultural products can protect the farmers from the vagaries of distress sale during the periods of bumper harvests. This will ensure farmers the post-harvest prices at the time of planting the crop itself.
- 22,000 rural markets should be linked to the e-NAM portal as quickly as possible.
- Model Contract farming Act 2018: The act lays special emphasis on protecting the interests of the farmers, considering them as weaker of the two parties entering into a contract, the ministry states. One of the key features of the Model Act, to be adopted and enacted by the states is that it brings contract farming outside the ambit of the APMC Act

7. Land Consolidation

- Another major issue relates to the shrinking size of farms which is also responsible for low incomes and farmers' distress. Thus, the viability of marginal and small farmers is a major challenge for Indian agriculture. We need to have policies for land consolidation along with land development activities in order to tackle the challenge of the low average size of holdings.'
- Digital India Land Record modernisation programme: The main aims of DILRMP are to usher in a system of updated land records, automated and automatic mutation , integration between textual and spatial records , inter-connectivity between revenue and registration, to replace the present deeds registration and presumptive title system with that of conclusive titling with title guarantee.
- Model Agricultural Land Leasing Act, 2016: It Legalises land leasing to promote agricultural efficiency, equity and power reduction. This will also help in much needed productivity improvement in agriculture as well as occupational mobility of the people and rapid rural change. This is very important step for land reforms through which needs of landlord as well as lease holder have been taken care.

While loan waiver schemes are like a band-aid on a wound, it is the larger agrariandistress that demands urgent policy attention. Unless there are steps 'to raise productivity, reduce costs of cultivation by providing quality inputs at subsidised rates, provide remunerative prices following the recommendations of the Swaminathan Commission, ensure assured procurement of output, expand access to institutional credit, enhance public investment for infrastructural development, institute effective crop insurance systems and establish affordably scientific storage facilities and agro-processing industries for value addition', farmers will continue to be bonded to low-income equilibrium and repeated debt traps.

E-COMMERCE RULES

Context:

The government recently announced new e-commerce rules restricting players from selling the products of companies in which they have a stake, and capping the percentage of inventory that a vendor can sell through a marketplace entity (IT platform of an e-commerce entity) or its group companies. To curb the practice of deep discounts, the government said they cannot directly or indirectly influence the price of goods and services, and also brought in a new set of rules that bar the sale of products exclusively in one marketplace.

Rules:

- Private Labels:
  - ✓ The first restriction explicitly disallows e-commerce marketplace companies from selling private labels that are brands they directly or indirectly own, on their platforms.
  - ✓ E-commerce companies would be barred from selling products sourced from firms in which they have a stake in or control over.
  - ✓ From the point of view of the vendor too, the clarification said that an entity with equity stake owned by an e-commerce marketplace entity or its group companies, or having control on its inventory by e-commerce marketplace entity or its group companies, will not be permitted to sell its products on the platform run by such marketplace entity.

- Exclusive Deals
  - ✓ In November 2018, the OnePlus 6T phone went on sale exclusively on Amazon.in, besides being available on the phone company's own website. Samsung launched its new A9 phone exclusively on Flipkart.com. Such "exclusive sale" deals are common and popular across e-commerce platforms in India. Well, not anymore.
  - ✓ The government has said that e-commerce entities will have to maintain a level playing field, and ensure that they do not directly or indirectly influence the sale price of goods and services. The policy mandates that no seller can sell its products exclusively on any marketplace platform

- Cash Back Services

  For the purposes of this clause, provision of services to any vendor on such terms which are not made available to other vendors in similar circumstances will be deemed unfair and discriminatory.

- Any service like logistics provided by e-commerce companies to vendors in which they have direct or indirect equity participation or common control stake should be fair and non-discriminatory. These services include logistics, warehousing, advertisement, marketing, payments, financing etc.
- The policy says a vendor will not be permitted to sell more than 25% of its products on an online platform of a single e-marketplace firm.

How will e-commerce majors be impacted?

Industry experts say the changes will have a significant impact on the business model of e-commerce majors, as most of them source goods from sellers who are related party entities. "Going forward, the suppliers will not be permitted to sell their products on the platform run by such marketplace entity. This will impact backend operations, as Group entities would have to be removed from the e-commerce value chain. The time has now come to look at franchise channels, rather than equity investments channels, to do business in India,"

Concerns for Companies

- The move could adversely impact investments being made to bring new sellers on board.
- This will also impact the FDI investments in India

How it helps domestic Players?

- The biggest winners from the new guidelines will be the traditional brick-and-mortar sellers. In the past few years, online marketplaces had hit the brick-andmortar hard. They had started luring away so many customers with discounts and cashbacks — and of course the ease of buying without stepping out — that brick-and-mortar retail was seen to be dying off soon.
- The new guidelines restricting discounts and cashbacks will help brick-and-mortar retailer retain customers.
- The revised norms are aimed at protecting the interest of domestic players, who have to face tough competition from e-retailers having deep pockets from foreign investors.

Small Sellers

- Smaller sellers on online platforms, which have been contesting the preferential treatment meted out by Flipkart and Amazon to their entities, have reason to cheer.
- Any service on an e-commerce platform – logistics, warehousing or easy financing options – will now have to be offered to all sellers and not to only preferred sellers.
- Ecommerce companies cannot charge additional prices from third-party sellers for these services. Even for private labels, etailers may not be able to advertise or promote their own brands while charging third-party sellers for pushing them.

Customers

Consumers may no longer enjoy the deep discounts offered by retailers that have a close association with marketplace entities.

Way Forward

Marketplaces are meant for genuine, independent sellers, many of whom are MSMEs (Micro, Small & Medium Enterprises). These changes will enable a level playing field for all sellers, helping them leverage the reach of e-commerce. Also, the Government should form a regulatory authority to check the flouting of e-commerce rules. The government should also come with an e-commerce policy soon so that small vendors get enough chances to participate in the online business.

REGIONAL COMPREHENSIVE ECONOMIC PARTNERSHIP (RCEP)

Context:
Leaders of the 10-member Association of South East Asian Nations have resoundingly committed to concluding negotiations for the Regional Comprehensive Economic Partnership free trade agreement by the end of 2019.

What is RCEP?

- RCEP is an ASEAN-centred proposal for a regional free trade area, which would initially include the ten ASEAN member states and those countries which have existing FTAs with ASEAN – Australia, China, India, Japan, Republic of Korea and New Zealand.
- The objective of launching RCEP negotiations is to achieve a modern, comprehensive, high-quality and mutually beneficial economic partnership agreement that will cover trade in goods, trade in services, investment, economic and technical cooperation, intellectual property, competition, electronic commerce, dispute settlement and other issues.

What RCEP Means for Businesses?
RCEP has the potential to deliver significant opportunities for businesses in the East Asia region, given the fact that the 16 RCEP participating countries account for almost half of the world's population; contribute about 30 per cent of global GDP and over a quarter of world exports. RCEP will provide a framework aimed at lowering trade barriers and securing improved market access for goods and services for businesses in the region.

Importance of RCEP for India

- The RCEP will provide a boost to India's Act East policy and will also influence the economic stature of India among the other South Asian countries.
- India's trade with the RCEP group of countries as a percentage of its total trade has increased over the past decade.
- The greater economic integration with the countries of SouthEast Asia and East Asia achieved through RCEP, India will have access to vast regional markets of these countries thereby helping its economy.
- India can leverage advantage in areas such as ICT, IT-enabled services, healthcare, and education services. RCEP would help in expanding into these markets along attracting greater FDI into these areas.
- It would also facilitate India's MSMEs to effectively integrate into the regional value and supply chains

India's Concerns and RCEP
India has been keen to join. But six years into negotiations, its concerns remain: ensuring that RCEP countries open their markets for Indian manpower (services).

- Opening its markets for cheaper goods from countries like China and South Korea: India has a trade deficit with as many as 11 of the RCEP countries and it is the only one among them that isn't negotiating a bilateral or multilateral free trade agreement with China at present.
- Country of Origin: India has also made tagging the "Country of Origin" on all products a sticking point in RCEP negotiations. India wants strict rules of origin to prevent Chinese goods from flooding the country through member countries that may have lower or no duty levels. Chinese garments are making their way into India through the duty-free route under the South Asia Free Trade Pact and the Duty-Free Quota-Free window from Bangladesh. Ensuring that RCEP countries open their markets for Indian manpower (services).
- India has expressed its reservations over inclusion of e-commerce in the RCEP talks.

- The RCEP draft is opposed to data localisation, while India fears the monopoly power of digital giants which includes the likes of Tencent and Alibaba.
- India has been insisting that any adoption of an agreement on trade in goods cannot be adopted without simultaneously adopting agreements on services and investments and any agreement on trade in goods without simultaneous agreement on services trade and investment will only harm India's interests.
- India has said the highest value addition with the help of indigenous inputs must be done in the country from which a product is exported. Globally, the average threshold for domestic content to get originating status for a product is 40-60%.

Progress Made

- The ASEAN countries are keen to have India as part of the partnership and have made India a concessional offer of opening up only about 83% of its market, as compared to the original 92% that the RCEP agreement stipulated,”. And regarding India’s concerns about further opening its market to China and skewing the trade deficit between them further, the RCEP allows for bilateral agreements also to be made so India can perhaps open up to China gradually and not in one go.”
- India has achieved some success regarding some of its other concerns, such as getting the other RCEP countries to liberalise their services markets and allow for a more free movement of service sector professionals.
- At least 13 countries including Australia, Japan and New Zealand have opposed India’s proposal for strict criteria to determine the source country of a product (Country of origin), based on which they get tariff concessions or duties.

Way Forward

Giving up the chance to join RCEP would mean India would not just miss out on regional trade, but also lose the ability to frame the rules as well as investment standards for the grouping. Above all, at a time of global uncertainties and challenges to multilateralism and the international economic order, a negative message on RCEP would undermine India’s plans for economic growth.India should proceed very carefully in future negotiations so that we are able to maximize our benefit from the group with a minimum threat to our domestic economy.

GDP DEBATE

Background

- In January 2015, the government moved to a new base year of **2011-12** from the earlier base year of 2004-05 for national accounts. The base year of national accounts had been revised earlier in January 2010.
- In the new series, the Central Statistics Office (CSO) did away with Gross Domestic Product (GDP) at factor cost and adopted the international practice of valuing industry-wise estimates as gross value added (GVA) at basic prices.
- With the move to the new base year, the growth rate of the economy for 2013-14 was estimated at 6.9%; it was 4.7% on the 2004-05 base. Similarly, the growth rate for 2012-13 was revised upwards to 5.1% from 4.5%.

Methods of estimation

Back series can be generated in three ways, the Committee on Real Sector Statistics said

- one, based on the new GDP methodology by using the base data wherever available;
- two, based on a production shift approach;
- three, by projecting the old series using the base year 2004-05 forward and then adjusting it to the 2011- 12 base by comparing with the new series. The third approach is yet to be tried, the Committee said.

Rebasing the GDP

- This is done by the government often to ensure that the GDP represents the true picture of the economy in terms of structural changes, the importance of the various sectors contribution of agriculture sector etc.
- The Present rebasing has been done by CSO taking into consideration the recommendations given the SNA (System of National Accounts) published by the UN in 2008.

Old vs New

- In the older system, IIP was used to measure manufacturing and trading activity. This accounted for the volume changes but not value changes. In the newer methodology, we use the concept of GVA - Gross Value Added, which measures the value addition done to the economy.
- In the older system, GDP was first estimated by using the IIP data and then updated using the ASI data (Annual Survey of Industries). ASI accounted only for those firms which were registered under the Factories Act. In the newer system, data from MCA21 is used (MCA 21 is an e-governance initiative of Ministry of Corporate Affairs, launched in 2006, it allows the firms/companies to electronically file their financial results. Under this data from more than 5,00,000 firms is collected)
- In the older system, farm produce was taken as a proxy for the calculation of agricultural income. The new methodology has widened the scope for calculating value addition in the agricultural sector.
- In the older system, very few mutual funds and NBFCs were considered for considering the financial activity. In the new methodology, the coverage has been expanded by including stockbrokers, asset management funds, pension funds, stock exchanges etc
- In the older system, the trading income data was used from the NSSO's 1999 establishment survey against this new series uses the 2011-12 survey.

Issues/concerns with the new methodology

- The revised data does not reflect the other macroeconomic parameters - tax revenues, credit growth, trade performance, corporate sales, profits, more importantly, the level of investment in the economy etc.
- The MCA21 data was collected only from 2008, then how can it be used to compare the earlier growth/ production.

- The Bank Credit Growth has averaged 20.3% between FY07 to FY12 and 12.3% between FY13 to FY18, during the same tenure the GDP growth rates have averaged 6.7% and 6.9% respectively (against the older growth rates of 8% and 6.9% respectively).
- There has been inconsistency even in case of the Investment Growth. Between FY07 to FY12, the growth rate of investment was 10.7% and 5.3% between FY13 to FY18.
- Tax collections between FY07 to FY12 has grown by 16.5% and then post that by 13.8%. There is a close relation between GDP growth and the tax collections growth. With higher growth, tax collections increase.
- The inflation rate averaged 9.6% between FY07 to FY12 and 6.4% thereafter. If the growth was driven by higher demand then, there should have been a higher inflation rate in the second part.
- The gross investment to GDP ratio was peaking at 38% (FY08 to FY11) during the UPA government against the 30.3% (FY15 to FY18) in the present government (as per the economic theory, higher investments, the higher and the growth in the GDP). So how can the GDP growth during the present government be higher than the previous government This could happen in cases where the production become very efficient leading to lower ICOR (Incremental Capital Output Ratio). But during the present government the twin shocks - Demonetisation and GST - have ensured that this is not the case.
- The exports during the UPA government boomed at an average growth rate of over 20% against the zero growth rates in the last four years.
- This kind of discussion damages the reputation of non-political institutions such as CSO.
- The data has been prepared from 2004-05 to 2010-11 and this coincides the period of UPA govt. Whether intended or not, this looks like political opportunism.

Arguments in favour of the new methodology.

- The decline in the bank credit growth can be explained by Increased capital efficiency . Bank facilitating credit to the corporates through instruments such as commercial papers, bonds etc
- Inconsistency in investment, increased economic efficiency, Decreased ICOR (Incremental Capital Output Ratio - measures higher/incremental amount of capital needed to increase the production by a unit). There is no uniform relationship between growth and investment. The cycle is revived through consumption and then investment kicks in.
- The tax collections could also have been varied because of various other factors such as higher compliance, changes in tax rates etc.

Way forward

- Allow the CSO to independently calculate, seek feedback and publish new data. The data/results should be realistic and reflective of the ground reality. In the case of India, it seems like the results are dependent on the government at the helm rather than the data that is collected. In such scenarios this will dent the image of India at the international level.
- If the CSO wants to make it more transparent, it can seek the opinion/involvement of experts. This wasn't done in the present context and the involvement of NITI Aayog in the announcement of data only made it worse.
- GDP is just a statistical tool. There should be more focus on inclusive growth rather than just the growth. Inclusive growth entails not just the growth but also the benefits derived by the growth in the form of development. It doesn't make any sense to have farmer suicides in Maharashtra which is one of the wealthiest states in India. This dichotomy can be seen where India is ranked 6th globally in terms of nominal GDP, top in terms of growth rates but 130th in case of HDI and 108th in WEF's Gender Gap Index!
- As per Credit Suisse, the wealth of the top 1 per cent has increased from 40% to 60% (between 2010 to 2016) and the top 10% owns 90% of the wealth. As per a report prepared by Azim Premji University, the growth for India has averaged 7% and the employment growth has been at 1%. Within this also the ones who are getting the formal jobs were receiving a decreasing share of total output.

- Though this would be very difficult but India could look into Chain Linking methodology or index. Wherein the developed economies keep updating their GDP calculation methodology very often.
- Moreover, the government has already announced that the base year is going to be changed likely to 2018-19 if it's done then these numbers will be revised all over again

ANGEL TAX

Context:
Angel tax rules for start-ups changed

Who are Angel Investors?
Angel investors are globally understood to be high net worth individuals who invest their personal income in business start ups or small and medium scale companies.

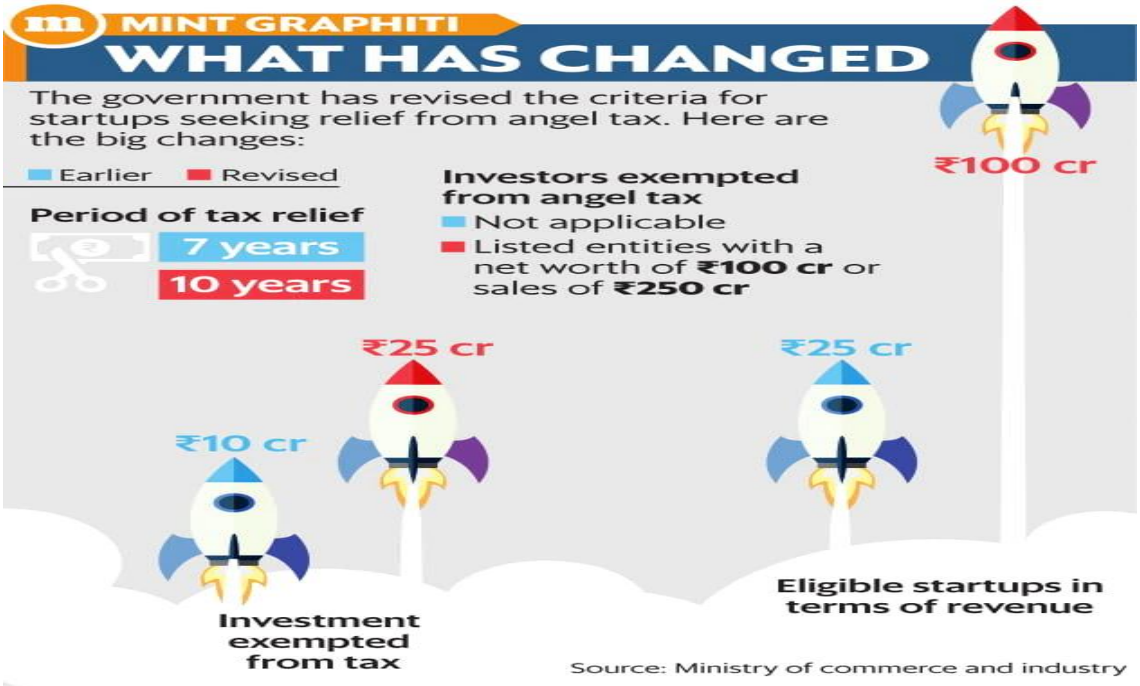
Why they are gaining importance?
Angel investors encourage entrepreneurship in the country by financing small startups at a stage where such start ups find it difficult to obtain funds from traditional sources of finance such as banks, financial institutions, etc. Further, such investors provide mentoring to the entrepreneurs as well as access to their own business networks. Thus, angel investors bring both experience and capital to new ventures.

What is Angel Tax and the issue related to them?

- Angel Tax, formally known as Section 56 (2) (viib) of the Income Tax Act, taxes funds raised by startups if they exceed the fair market value of the company. It was introduced in 2012 by the UPA government in order to detect money laundering practices and catch bogus startups.
- In the past few years, many startups have raised concerns over angel tax calling it an extremely unfriendly and unfair tax as it is not possible to calculate the fair market value of a startup. They have also alleged that to calculate the fair market value, the Assessing Officer (AO) chooses the cash discounted flow method, which is not very startup friendly but suits the tax officers.
- Last December, over 2,000 startups in the country received notices to clear the angel tax and some of them were also notified to pay an expensive penalty for not paying the dreaded tax on time. Also the dept. Asks for documents which usually are not required.

What are new rules?

- According to the new rules, investments up to ₹25 crore in companies that are less than 10 years old and with a total turnover of less than ₹100 crore will be exempted from the new angel tax instead of the existing cap of ₹ 25 crore.
- Further, investments made by listed companies with a net worth of at least ₹100 crore or a total turnover of at least ₹250 crore will be fully exempt from the tax; so will investments made by non-resident Indians.
- An eligible start-up would be one that is registered with the government, has been incorporated for less than 10 years, and has a turnover that has not exceeded ₹100 crore over that period.
- Also Finance Minister announced that the issue of establishing identity of the investor and source of his funds will be resolved by putting in place a mechanism of e-verification. With this, funds raised by startups will not require any kind of scrutiny from the Income Tax Department
- Also announced that startups will not be required to present their fair market value of their shares issued to certain investors including Category-I Alternative Investment Funds (AIF).



Significance of new rules

- The easing of the outdated angel tax rules will definitely make life easier for start-ups, which are in desperate need for capital to fund their growth and other business requirements.
- The changes are expected to encourage wealthy individuals to invest in startups that receive capital at a premium on account of their innovative business model although the valuation is not justified by the physical assets they hold.
- Further, since the new rules are set to be applied retrospectively, many young companies that have received notices from the Income Tax Department in the last few years will be relieved by the latest tweak in the rules.

Concerns

- Companies wishing to make use of the latest exemption, for instance, will first need to be registered with the government as start-ups.
- To be classified as one, a company needs to attest to conditions such as that it has not invested in any land unrelated to the business, vehicles worth over ₹10 lakh, or jewellery.
- These requirements, while probably aimed to prevent money- laundering, can lead to considerable bureaucratic delays and rent-seeking.
- Also, the new rules for the angel tax, though less stringent than before, can cause the same old problem of arbitrary tax demands for companies that do not fall under the defined category of start-ups.
- The taxes to be paid are still supposed to be calculated by the authorities based on how much the sale price of a company's unlisted share exceeds its fair market value.
- It is impossible to know the market value, let alone the fair market value, of shares that are not openly traded in the marketplace. So tax authorities with ulterior motives will still possess enough leeway to harass start-ups with unreasonable tax demands. Unless the government can address the arbitrary nature of the angel tax, the damage to investor confidence may remain.

The changes, in total, are a welcome move, for start-ups ... by ensuring that greater number of startups are able to avail of the exemptions, as well as facilitating investments by domestic investors without the apprehension of tax levy. The changes introduced will also alleviate the government's concerns to a certain extent regarding shell companies evading taxes under this route, while allowing exemptions for startups.

UNIVERSAL BASIC INCOME

There is high growth and GDP numbers that the nation is witnessing. But this is not transforming the development of individual and personal empowerment. Despite rapid economic growth millions of people remain unemployed and are extremely poor, in the last three decades.

- There are large groups of landless labourers, agricultural workers and marginal farmers who suffer from multidimensional poverty. These groups have not benefited from economic growth. They were and still are the poorest Indians. Various welfare schemes have also failed to bring them out of penury.
- Because people are getting poor, there is lack of basic amenities the idea of a universal basic income (UBI) is gaining currency globally.
- It has supporters among the political left and right, and among proponents as well as opponents of the free-market economy.

Definition

Universal Basic Income, UBI for short. UBI has three components: universality, unconditionality, and agency (by providing support in the form of cash transfers to respect, not dictate, recipients'choices). It is premised on the idea that a just society needs to guarantee to each individual a minimum income which they can count on, and which provides the necessary material foundation for a life with access to basic goods and a life of dignity. A universal basic income is, like many rights, unconditional and universal: it requires that every person should have a right to a basic income to cover their needs, just by virtue of being citizens.

In short, A UBI requires the government to pay every citizen a fixed amount of money on a regular basis and without any conditionality's.

Current context

- The National Democratic Alliance government has already unfolded a limited version of the UBI in the form of the Pradhanmantri Kisan Samman Nidhi Yojana (PM-KISAN) which promises ₹6,000 per annum to farmers who own less than 2 hectares of land.
- Therefore is it important to expand this to other sectors? Is the question of the hour?

Why UBI is required?

- **Social Justice:** UBI is, first and foremost, a test of a just and non-exploitative society. A society that fails to guarantee a decent minimum income to all citizens will fail the test of justice. Promotes many of the basic values of a society which respects all individuals as free and equal. It promotes liberty because it is anti-paternalistic, opens up the possibility of flexibility in labour markets. It promotes efficiency by reducing waste in government transfers.
- **Poverty Reduction:** Conditional on the presence of a well-functioning financial system, a Universal Basic Income may simply be the fastest way of reducing poverty.
- **Agency:** Our current welfare system, even when well intentioned, inflicts an indignity upon the poor by assuming that they cannot take economic decisions relevant to their lives. An unconditional cash transfer treats them as agents, not subjects. UBI liberates citizens from paternalistic and clientelistic relationships with the state. By taking the individual and not the household as the unit of beneficiary, UBI can also enhance agency, especially of women within households.
- **Employment:** UBI could also open up new possibilities for labour markets. It creates flexibility by allowing for individuals to have partial or calibrated engagements with the labour market without fear of losing benefits. They allow for more non-exploitative bargaining since individuals will no longer be forced to accept any working conditions, just so that they can subsist.
- **Administrative Efficiency:** In India in particular, the case for UBI has been enhanced because of the weakness of existing welfare schemes which are riddled with misallocation, leakages and exclusion of the poor. When the trinity of Jan-Dhan, Aadhaar and Mobile (popularly referred to as JAM) is fully adopted the time would be ripe for a mode of delivery that is administratively more efficient.

- **Institutional credit :** According to National Sample Survey Office (NSSO) data from the 70th round, institutional credits account for less than 15% of the total borrowing by landless agricultural workers; The figure for marginal and small farmers is only 30%. These groups have to borrow from moneylenders and adhatiyas at exorbitant interest rates ranging from 24 to 60%. As a result, they do not stand to benefit much from the interest rate subsidy for the agriculture sector.
- Likewise, the benefits of subsidized fertilizers and power are enjoyed largely by big farmers. In urban areas, contract workers and those in the informal sector face a similar problem. The rapid pace of automation of low-skill jobs and formalisation of the retail sector mean the prospects of these groups are even bleaker.

The Conceptual Case against UBI

- **Reduces the incentive to work:** the levels at which universal basic income are likely to be pegged are going to be minimal guarantees at best; they are unlikely to crowd incentives to work.
- **Detaches Income from employment:** society already does this, but largely for the rich and privileged. Any society where any form of inheritance or accepting nonwork related income is allowed, already detaches income from employment. So, receiving a small unearned income as it were, from the state should be economically and morally less problematic than the panoply of "unearned" income our societies allow.

Better targeting of poor As all individuals are targeted, exclusion error (poor being left out) is zero though inclusion error (rich gaining access to the scheme) is 60 percent[5].	**Gender disparity induced by cash** Gender norms may regulate the sharing of UBI within a household – men are likely to exercise control over spending of the UBI. This may not always be the case with other in-kind transfers.
Insurance against shocks This income floor will provide a safety net against health, income and other shocks.	**Implementation** Given the current status of financial access among the poor, a UBI may put too much stress on the banking system.
Improvement in financial inclusion Payment – transfers will encourage greater usage of bank accounts, leading to higher profits for banking correspondents (BC) and an endogenous improvement in financial inclusion. Credit – increased income will release the constraints on access to credit for those with low income levels.	**Fiscal cost given political economy of exit** Once introduced, it may become difficult for the government to wind up a UBI in case of failure.
Psychological benefits A guaranteed income will reduce the pressures of finding a basic living on a daily basis.	**Political economy of universality – ideas for self-exclusion** Opposition may arise from the provision of the transfer to rich individuals as it might seem to trump the idea of equity and state welfare for the poor.
Administrative efficiency A UBI in place of a plethora of separate government schemes will reduce the administrative burden on the state.	**Exposure to market risks (cash vs. food)** Unlike food subsidies that are not subject to fluctuating market prices, a cash transfer's purchasing power may severely be curtailed by market fluctuations.

- **Should income be unconditional, with no regard to people's contribution to society?** Individuals as a matter of fact will in most cases contribute to society. In fact, UBI can also be a way of acknowledging non-wage work related contributions to society.

Benefits of UBI

- **Reduces misallocation of resources across districts:** a UBI will simply amount to a transfer of resources from above and need not be "accessed" by beneficiaries. In addition, by focusing on universality, UBI reduces the burden on the administration further by doing away with the tedious task of separating the poor from the non-poor.
- **Reduces out of system leakage:** Conceptually, a UBI reduces out of system leakage because transfers are directed straight to the beneficiaries' bank accounts. The scope for diversion is reduced considerably, since discretionary powers of authorities are eliminated almost wholly.
- **Exclusion error:** Given the link between misallocation and exclusion errors, a UBI that improves allocation of resources should mechanically bring down exclusion error. Furthermore, by virtue of being universal, exclusion errors under the UBI should be lower than existing targeted schemes.
- Apart from this, it will much more benefits like it will act as an Insurance Against Risk And Psychological Benefits, promotes financial inclusion, etc.

Guiding Principles for Setting up a UBI

- **De jure universality, de facto quasi universality:** It is important to consider ideas that could exclude the obviously rich i.e., approaching targeting from an exclusion of the undeserving perspective than the current inclusion of the deserving perspective lIke Define the non-deserving based on ownership of key assets, Adopt a 'give it up' scheme , "name and shame" and Self-targeting etc.
- **Gradualism:** A guiding principle is gradualism: the UBI must be embraced in a deliberate, phased manner. A key advantage of phasing would be that it allows reform to occur incrementally – weighing the costs and benefits at every step.
- **UBI and redistributive resource transfers to states:** The UBI offers a possible way-around: a part of the redistributive resource transfers may be transferred by the centre directly into beneficiaries' accounts in the form of a pilot UBI programme.

The idea of a universal basic income (UBI) is gaining ground globally. It has supporters among the political left and right, and among proponents as well as opponents of the free-market economy. The income transfer scheme might be costly. However, the cost of persistent poverty is much higher.

NUDGE POLICIES

What are 'nudge policies'?

Recently, behavioural economists have discovered the efficacy of a new class of "nudge" policies that lie between laissez faire and incentives. Such policies leverage insights from human psychology to influence the choice architecture of people. Nudge policies gently steer people towards desirable behaviour even while preserving their liberty to choose.

Figure 1: From Minimal Influence to Coercion

Understanding the principles of behavioural economics, therefore, can bridge the gap between people's preferences and the choices they make, and thereby enable informed policymaking. Many governments, including the U.S., the U.K. and Australia, have set up dedicated units to use behavioural insights for effective policymaking.

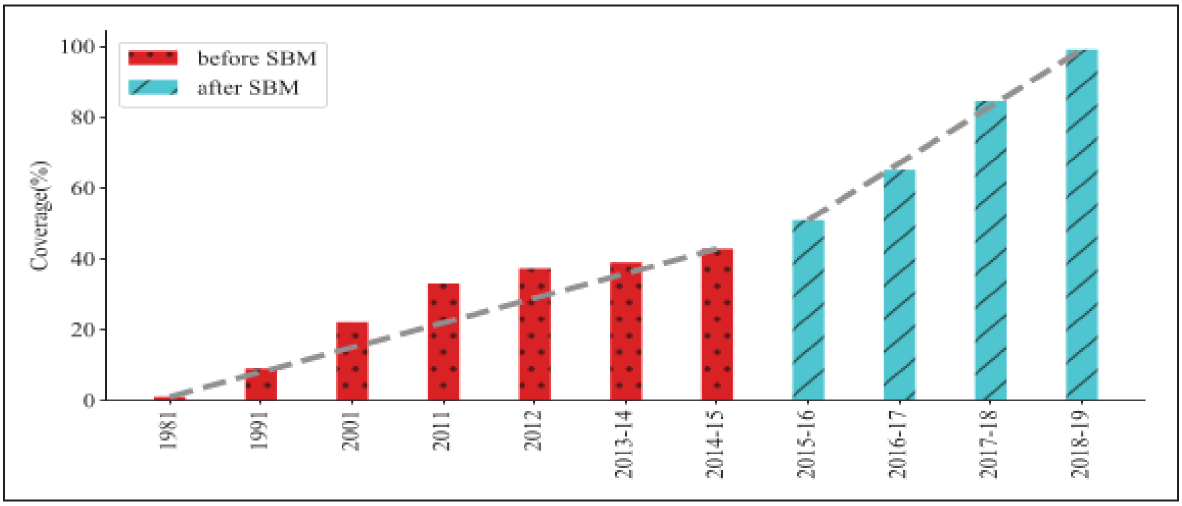
Successful Applications Of Behavioural Insights In India

Many Indian schemes that employ insights from behavioural economics have met with success. The Swachh Bharat Mission (SBM) and the Beti Bachao, Beti Padhao (BBBP) scheme are cases in point.

Swachh Bharat Mission (SBM)

- SBM was launched on 2 nd October, 2014 to achieve universal sanitation coverage. It is not the first programme to address sanitation concerns.
- SBM is the first one to emphasize behaviour change as much as, if not more than, construction of toilets.
- SBM has achieved success in not only providing toilets but also in ensuring that these toilets are used. An independent verification of SBM through the National Annual Rural Sanitation Survey (NARSS) 2018-19 has found that 93.1 per cent of rural households had access to toilets, 96.5 per cent of the households in rural India who have access to a toilet use it. This re- confirmed the Open Defecation Free (ODF) status of 90.7 per cent of villages that were previously declared and verified as ODF by various districts/states.
- Measures of female literacy and early marriages of girls, which associate strongly with rigid social norms, correlate powerfully with access and usage of toilets across states.

Figure 3: National Sanitation Coverage before and after SBM



Source: Ministry of Drinking Water and Sanitation (MoDWS)
Note: Data for 1981-2011 is as per Census.

Use of Behavioural insights in SBM:

1. **Launch Date and Symbol:** Behavioural economics emphasises the role of context in influencing choices and decisions, which has been effectively adopted by the SBM campaign. SBM was launched on 2nd October, 2014, the birthday of India's most revered 'role model' Mahatma Gandhi. The idea was to create a mass movement on the lines of 'satyagraha' for a cleaner India. The symbol used for SBM invokes Gandhiji's ideas.

2. **Swachhagrahis:** More than five lakh swachhagrahis, foot soldiers of the SBM, were recruited; to reinforce the similarity with satyagrahis. Also, swachhagrahis were able to leverage their social ties within their villages to effect change.
3. Further, SBM relies on community-based approaches to sanitation. The fear of community scorn, or a desire to fit in, or both, have led many to renounce open defecation.
4. Appealing to people's emotions, for example by attaching a sense of disgust to open defecation, has a better chance of moving people to change.

Beti Bachao, Beti Padhao (BBBP)

India's sex ratio at birth 1 (SRB) was on a steady decline until the first decade of the twenty-first century, when a number of initiatives, including BBBP, were launched in quick succession to arrest this trend. BBBP Scheme was launched on 22 nd January, 2015 to address the issue of decline in Child Sex Ratio and related issues of empowerment of girls and women.

Use of Behavioural insights in BBBP

- **Match "mental models" of people:** The campaign was flagged from Panipat, Haryana, which had the worst child sex ratio at 834 among Indian states as compared with the national average of 919 (as per Census, 2011). The choice of Panipat in the battle against the socially ingrained bias against the girl child was also symbolic through the association with the famous battles fought at Panipat in 1526, 1556 and 1761.

- The initiative was expanded to all districts of the Country on March 8, 2018 from Jhunjunu, Rajasthan. Rajasthan was chosen as the State improved by 34 points from 888 girls per 1000 boys in 2011 to 922 per 1000 boys in 2017-18 to indicate that good performance receives a reward. Also, International Women's Day was chosen 2015-16 to launch to reinforce the stress on gender empowerment and establish the social norm of 'girls are valuable'.
- **Effective Use of "Social norm" in BBBP**:
  - 'Selfie with Daughter' initiative: Two elements enabled the campaign's success: first, telling people what the norm is, and second, showcasing the thousands of other people who were acting in line with that norm.

The strategy addresses a cognitive bias called 'failure bias' (Baumeister and Bratslavsky, 2001). The failure bias is the tendency to focus on failures rather than successes, mostly because failures have greater visibility. Because failures get the spotlight, people tend to think that failing is the norm, or at least that failing is more prevalent than it really is. Therefore, in the context of BBBP, focus must be on people who treat their girls fairly; this corrects the failure bias and makes the social norm of fair treatment of girls unequivocally clear.

Figure 12: Principles of Behavioural Economics

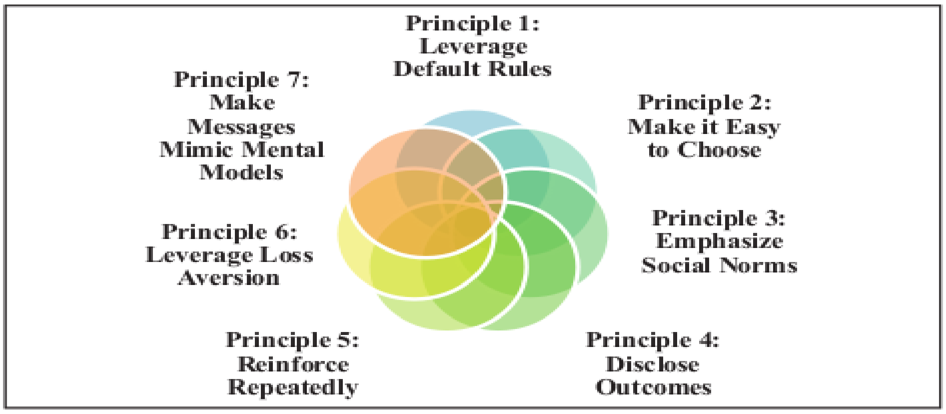


Table 3: Using Behavioural Principles to Overcome Cognitive Biases

Cognitive bias	Behavioural principle	General application across all programs
Anchoring bias	Principle 1: Leverage default rules	• Choose the right default; default choice should maximise welfare. • Make the default 'opt-in' for welfare programs like insurance, retirement savings, organ donation, etc. • Make the default 'opt-out' for purchasing add-on services, enrolling for a subsidy, etc.
	Principle 2: Make it easy to choose	• Keep options few in number and easy to comprehend. • Reduce logistical and administrative impediments to choosing. • Offer micro-incentives.
Failure bias	Principle 3: Emphasize social norm	• Emphasize the number of people who vote, save regularly, file taxes on time, etc. – the enhancers of good behaviour. • Wherever possible, clarify the insignificant role of detractors/ negative influencers to avoid "failure bias". • Focus on influencers that people can relate to, for example those in the same geography or age group.
	Principle 4: Disclose outcomes	• Disclose the realized benefits of good behaviour.
Sunk cost bias	Principle 5: Reinforce repeatedly	• Remind people of past good behaviour, for example, that they saved regularly for the last three months, to invoke the sunk cost fallacy; people tend to continue their past behaviour, especially when reminded about the same. • Elicit a pre-commitment for desired behaviour, and if possible, enable immediate action as per the commitment.
Loss aversion bias	Principle 6: Leverage loss aversion	• Design incentives to reward good behaviour *ex ante* with threat to revoke reward later if behaviour fails to match expectations.
Flawed mental models and confirmation bias	Principle 7: Make messages match mental models	• Train people to shift to new rules of thumb, for example, "fluids out – so fluids in" to increase fluid intake during diarrhoea. • Make the rules of thumb catchy, easy to remember and intuitive.

Suggestions for Policy Makers

The possibilities, however, to employ the principles of behavioural economics to policymaking, especially in India where social norms so crucially influence behaviour are enormous. To avail these benefits, the following measures are suggested for implementation.

- Set up a behavioural economics unit in the Niti Aayog.
- Every program must go through a "behavioural economics" audit before its implementation.
- As several programs are administered by state governments, the behavioural economics team can work with various state governments.

Conclusion

Behavioural economics is, however, not a panacea to policymaking; its potential needs to be understood and put in perspective. Nudge policies cannot and should not supplant every incentive-based and mandate-based policy. For example, a policy that merely nudges people to refrain from assaulting others will fail as such situations warrant strict decree or, at least, a stronger push than a mere nudge. However, the majority of public policy issues are amenable to incorporating nudges. In fact, many incentive and mandate- based policies may be clubbed with a nudge effect to increase their efficacy.

Q1. What are nudge policies? Do you think they can lead to revolution in the policy making in India?

INSOLVENCY AND BANKRUPTCY CODE, 2016

What does the Code aim to do?
The 2016 Code provides for a time-bound process to resolve insolvency. When a default in repayment occurs, creditors gain control over the debtor's assets and must take decisions to resolve insolvency within a 180-day period. To ensure an uninterrupted resolution process, the Code also provides immunity to debtors from resolution claims of creditors during this period. The Code also consolidates provisions of the current legislative framework to form a common forum for debtors and creditors of all classes to resolve insolvency.

Who facilitates the insolvency resolution under the Code?

- The Insolvency Professionals: These professionals will administer the resolution process, manage the assets of the debtor, and provide information for creditors to assist them in decision making.
- Insolvency Professional Agencies: The insolvency professionals will be registered with insolvency professional agencies. The agencies conduct examinations to certify the insolvency professionals and enforce a code of conduct for their performance.
- Information Utilities: Creditors will report financial information of the debt owed to them by the debtor. Such information will include records of debt, liabilities and defaults.
- Adjudicating authorities: The proceedings of the resolution process will be adjudicated by the National Companies Law Tribunal (NCLT), for companies; and the Debt Recovery Tribunal (DRT), for individuals. The duties of the authorities will include approval to initiate the resolution process, appoint the insolvency professional, and approve the final decision of creditors.
- Insolvency and Bankruptcy Board: The Board will regulate insolvency professionals, insolvency professional agencies and information utilities set up under the Code.

What is the procedure to resolve insolvency in the Code?
The Code proposes the following steps to resolve insolvency:

1. Initiation: The When a default occurs, the resolution process may be initiated by the debtor or creditor. Decision to resolve insolvency: A committee consisting of the financial creditors will take a decision regarding the future of the outstanding debt owed to them. They may choose to revive the debt owed to them, or sell (liquidate) the assets of the debtor to repay the debts owed to them. If a decision is not taken in 180 days, the debtor’s assets go into liquidation.
2. Liquidation: If the debtor goes into liquidation, an insolvency professional administers the liquidation process. Proceeds from the sale of the debtor’s assets are distributed in the already established order of precedence.

The Insolvency and Bankruptcy Code (Amendment) Ordinance, 2018

- The Ordinance amends the Insolvency and Bankruptcy Code, 2016 to clarify that allottees under a real estate project should be treated as financial creditors.
- The voting threshold for routine decisions taken by the committee of creditors has been reduced from 75% to 51%. For certain key decisions, this threshold has been reduced to 66%.
- The Ordinance allows the withdrawal of a resolution application submitted to the NCLT under the Code. This decision can be taken with the approval of 90% of the committee of creditors.

Issues with IBC,2016

- **Missing the deadline:** IBC mandates that an insolvent asset must be resolved in 270 days. Out of the 12 big accounts initially referred to IBC, five cases are pending for more than 600 days due to continuous litigation by some party or the other. Among the most prominent examples of this chequered journey for the IBC is the Essar Steel insolvency. It has been more than 600 days since the Rs 50,000-crore account entered the IBC.

- **Lack of benches and judges:** India has 14 NCLTs, and two are yet to start functioning. The government had a couple of years back announced to set up 24 bankruptcy courts. The NCLT judge roster shows 27 members have been sharing the workload against the target of appointing 60 judicial and technical members. Delhi and Kolkata are sharing the workloads of Jaipur, Chandigarh, Guwahati and Cuttack benches. Recently the government highlighted that it has been taking steps to increase capacity of National Company Law Tribunal (NCLT) and increased its benches from 10 to 15. Also 26 new members have been added taking total strength to 52.
- **Haircuts:** It is the extent of write off that banks undertake as part of resolution plan to get the company back on track. So far financial creditors have got 43 per cent of their claims and 188 per cent of the liquidation value. Steps should be taken so that haircuts are reduced.
- All these factors are raising concerns that IBC will meet the same fate as DRT and SARFAESI and banks will eventually lose confidence in IBC
- The recent Supreme Court order setting aside RBI's decision to send all power companies to the NCLT has also set a wrong precedent.

Parliament has recently passed **Insolvency and Bankruptcy Code (amendment) Bill 2019** to resolve few of the issues:

Insolvency and Bankruptcy Code (amendment) Bill 2019

- The Code provides a time-bound process for resolving insolvency in companies and among individuals. Insolvency is a situation where individuals or companies are unable to repay their outstanding debt.
- Under the Code, a financial creditor may file an application before the National Company Law Tribunal (NCLT) for initiating the insolvency resolution process. The NCLT must find the existence of default within 14 days. Thereafter, a Committee of Creditors (CoC) consisting of financial creditors will be constituted for taking decisions regarding insolvency resolution. The CoC may either decide to restructure the debtor's debt by preparing a resolution plan or liquidate the debtor's assets.
- The CoC will appoint a resolution professional who will present a resolution plan to the CoC. The CoC must approve a resolution plan, and the resolution process must be completed within 180 days. This may be extended by a period of up to 90 days if the extension is approved by NCLT.
- If the resolution plan is rejected by the CoC, the debtor will go into liquidation. The Code provides an order of priority for the distribution of assets in case of liquidation of the debtor. This order places financial creditors ahead of operational creditors (e.g., suppliers). In a 2018 Amendment, home-buyers who paid advances to a developer were to be considered as financial creditors. They would be represented by an insolvency professional appointed by NCLT.
- The Bill addresses three issues. First, it strengthens provisions related to time-limits. Second, it specifies the minimum payouts to operational creditors in any resolution plan. Third, it specifies the manner in which the representative of a group of financial creditors (such as home-buyers) should vote.

Conclusion

A lot many things have been settled through repeated amendments but still a lot needs to be done. Not only do the new amendments plug loopholes in the Insolvency and Bankruptcy Code (IBC), which some promoters had used to stall resolution of their bankrupt companies, but the changes also seek to ensure time-bound resolution of insolvency cases.There has been a marked improvement in the recovery process which is already leading to billions of dollars being invested in the country due to the protection of creditor rights. Compared to other markets, the pace at which we have achieved this is also noteworthy. In the US, for example, it took 10 years (from 1978) for the bankruptcy law to attain some stability. The progress in India has been remarkable by global standards.

SWIFT (Society for Worldwide Interbank Financial Telecommunication)

Context: RBI had been warning lenders on possible misuse of Society for Worldwide Interbank Financial Telecommunication (SWIFT); it has finally fined 36 banks for negligence.

What is SWIFT?

- The Society for Worldwide Interbank Financial Telecommunication (SWIFT) is the global messaging software that enables financial entities to send and receive information about financial transactions in a secure, standardised and reliable environment.
- It is a global member-owned cooperative that is headquartered in Brussels, Belgium.
- It was founded in 1973 by a group of 239 banks from 15 countries which formed a co-operative utility to develop a secure electronic messaging service and common standards to facilitate cross-border payments.
- Encryption is added as the messages leave the customer environment and enter the SWIFT Environment.
- Messages remain in the protected SWIFT environment, subject to all its confidentiality and integrity commitments, throughout the transmission process while they are transmitted to the operating centres (OPCs) where they are processed — until they are safely delivered to the receiver.

Details:

- Much before the Punjab National Bank Scam in 2018, RBI cautioned the banks about the possible misuse of the SWIFT infrastructure and directed them to implement safeguards.
- Despite repeated warnings, the PNB fraud, touted to be among the biggest in the industry, happened.
- Even the PNB scam failed to wake up banks. As a result, the regulator came down heavily on the banks, imposing monetary penalty on 36 banks for failing to implement the safeguard which was mainly integrating the SWIFT infrastructure with Core Banking Solution (CBS) within a time frame.
- The Banking Regulation Act allows the RBI to impose a maximum penalty of Rs. 1 crore for a single breach.
- In April 2017, under former RBI Governor Urjit Patel, the RBI had set up an enforcement department. The idea was to centrally speed up regulatory compliance.
- The purpose was to separate those who oversaw possible rule breaches and those who decided on punitive actions so that the enforcement process operated fairly and was evidence based.
- “Now, all the penalty powers are processed through one single department. The department essentially was set up to identify actionable violations. It follows a consistent, rule-based policy for enforcement,” central banking sources indicate.

SWIFT and Its importance in India

The SWIFT is a secure financial message carrier which can avoid fraudulent transactions. In other words, it transports messages from one bank to its intended bank recipient. Its core role is to provide a secure transmission channel so that Bank A knows that its message to Bank B goes to Bank B and no one else. Bank B, in turn, knows that Bank A, and no one other than Bank A, sent, read or altered the message en route. Banks, of course, need to have checks in place before actually sending messages. In the PNB case, one of its biggest failures was the missing link between SWIFT and the bank’s backend software. This allowed fraudulent use of a key credit instrument — letters of understanding or a loan request to another bank through the SWIFT network — to transfer funds.

RBI Circular:

- It was an outcome of what happened in the PNB scam. It was believed that the scam is mainly due to people and process failure not so much a technology failure.

- The guidelines were mainly about people and process and though there were some technology tweaking that the banks had to do, the major one had been sending messages from the core banking system.

Why were the banks penalised?

According to the experts, there are four reasons why the banks were penalised:

1. For not maintaining the timeline though many of them have complied with the norms now.
2. Since the Core Banking Solution (CBS) was required to be integrated with SWIFT, the question is whether CBS was equipped for this. Which means compliance was required from third-party vendors and their lack of readiness also could have led to delays.
3. Third, even if the third-party software was ready, the bank may not have used it effectively.
4. There could be some small banks who may be not have started the process.

Conclusion:

- There are speculations that the RBI action may not go down well with the global inter-governmental agency Financial Action Task Force (FATF) during the country assessment.
- At present, the fourth round of assessment is going on and India is likely to be assessed soon.
- The FATF reviews anti-money laundering, combating the financing of terrorism policies of countries, the compliance of financial institutions of these countries and the supervisory effectiveness in enforcing them.
- Questions could be raised as to why banks are so reluctant to comply with regulatory directions on an important issue such as international wire transfer mechanism.
- Queries may also be raised as to why the regulator was unable to make lenders comply with its directions in a time-bound manner and as to what steps the regulator is taking so that such incidents do not recur

PERMANENT STATUS TO FINANCE COMMISSION

Context: RBI governor Shaktikanta Das bats for permanent status to Finance Commission.

What is the Finance Commission?

The Finance Commission is constituted by the President under article 280 of the Constitution, mainly to give its recommendations on distribution of tax revenues between the Union and the States and amongst the States themselves. Two distinctive features of the Commission's work involve redressing the vertical imbalances between the taxation powers and expenditure responsibilities of the centre and the States respectively and equalization of all public services across the States.

What are the functions of the Finance Commission?

It is the duty of the Commission to make recommendations to the President as to—

- the distribution between the Union and the States of the net proceeds of taxes which are to be, or may be, divided between them and the allocation between the States of the respective shares of such proceeds;
- the principles which should govern the grants-in-aid of the revenues of the States out of the Consolidated Fund of India;
- the measures needed to augment the Consolidated Fund of a State to supplement the resources of the Panchayats in the State on the basis of the recommendations made by the Finance Commission of the State;
- the measures needed to augment the Consolidated Fund of a State to supplement the resources of the Municipalities in the State on the basis of the recommendations made by the Finance Commission of the State;
- any other matter referred to the Commission by the President in the interests of sound finance.

The Commission determines its procedure and have such powers in the performance of their functions.

Why Permanent Status to FC?

- **Need for a robust expenditure planning:** While it is important to adhere to fiscal deficit targets, it is equally important to undertake robust expenditure planning to address the socio-economic challenges.
- **To ensure consistencies:** According to the RBI governor, finance commissions have over the past several decades adopted different approaches with regard to principles of tax devolution, grants to be given to states and fiscal consolidation issues. There is a need to ensure consistency between finance commissions so that there is some certainty in the flow of funds to states.
- **To promote fresh and innovative thinking:**
- During the intervening period, it can also address issues arising from implementation of the recommendations of the finance commission.

According to former Reserve Bank Governor Y.V. Reddy, the Finance Commission should be allowed to function in the same manner as it is doing currently. "Currently, the Finance Commission has a five year term. The system of appointing a Finance Commission once in five years is fine. Let it continue. The way forward is to stick to the old approach, New approach is not warranted. What is warranted is to behave more faithfully, with honesty and integrity.

Implications

The proposal for making the Finance Commission a permanent body could evolve in two ways:

- First, the government would abdicate its discretion currently available in designing and implementing the specific purpose transfers.

- Second, creating permanent finance commission with a particular set of rules may hamper fiscal federalism as it would dilute the neutrality of the Finance Commission between the Union and the States through a process of continuous association with the government.

So there is considerable merit in having one apolitical body that provide stability and predictability primarily to share taxes that ensured fiscal balance and another forum of transfers involving continuous political bargaining with a broader mandate.

GENETICALLY MODIFIED CROPS

Context:

Bt brinjal being illegally grown in Haryana.

What are GM Crops?

GM is a technology that involves inserting DNA into the genome of an organism. To produce a GM plant, new DNA is transferred into plant cells. Usually, the cells are then grown in tissue culture where they develop into plants. The seeds produced by these plants will inherit the new DNA. Genetic modification of crops involves adding a specific stretch of DNA into the crop's genome, giving it new or different characteristics. This could include changing the way the crop grows, or making it resistant to a particular disease. The new DNA becomes part of the GM crop's genome which the seeds produced by these crops will contain.

Concept of BT crops'

Bt Crops are named for Bacillus thuringiensis (Bt), a bacteria that naturally produces a crystal protein that is toxic to many pest insects. Bt crops are crops that are genetically engineered to produce the same toxin as Bt in every cell of the plant, with the goal of protecting the crop from pests.

Advantages of BT Crops.

- They help in controlling the soil pollution as the use of synthetic pesticides are reduced when the plants begin to produce the toxins by themselves in own tissues.
- BT Crops help in protecting the beneficial insects.
- Reduced manpower and labor charges.
- The pests hiding inside plant parts are controlled effectively.
- It is cost effective as multiple sprays are not needed.

Biosafety concerns

The major biosafety concerns falls into these categories:

1. **Bio-safety of human and animal health**

- Risk of toxicity, due to the nature of the product or the changes in the metabolism and the composition of the organisms resulting from gene transfer.
- Newer proteins in transgenic crops from the organisms, which have not been consumed as foods, sometimes has the risk of these proteins becoming allergens.
- Genes used for antibiotic resistance as selectable markers have also raised concerns regarding the transfer of such genes to microorganisms and thereby aggravate the health problems due to antibiotic resistance in disease causing organisms.

2. Ecological concerns

- Gene flow due to cross pollination for the traits involving resistance can result in the development of tolerant or resistant weeds that are difficult to eradicate.
- GM crops could lead to erosion of biodiversity and pollute the gene pools of endangered plant species.
- Genetic erosion has occurred as the farmers have replaced the use of traditional varieties with monocultures.

3. Environmental concerns

- Effect of transgenic plants on population dynamics of target and non-target pests, secondary pest problems, insect sensitivity, evolution of new insect biotypes, environmental influence on gene expression, development of resistance in insect population, development of resistance to herbicide
- Gene escape into the environment- accidental cross breeding GMP plants and traditional varieties through pollen transfer can contaminate the traditional local varities with GMO genes resulting in the loss of traditional varieties of the farmers.

Public attitude

Consumer response depends on perceptions about risks and benefits of genetically modified foods. The media, individuals, scientists and administrators, politicians and NGO have the responsibility to educate the people about the benefits of GM foods.

Socio economic and ethical consideration

Potential benefits to the consumers and farmers. Due to increasing seed market, the developing countries may get dependent on few suppliers.

Regulatory Mechanisms in India

Biosafety regulations cover assessment of risks and the policies and procedures adopted to ensure environmentally safe applications of biotechnology. The regulatory framework for transgenic crops in India consists of the following rules and guidelines.

a) Rules and policies

- Rules, 1989 under Environment Protection Act (1986)
- Seed Policy, 2002

b) Guidelines

- Recombinant DNA guidelines, 1990
- Guidelines for research in transgenic crops, 1998

GM Crops in India

- The topic on GM crops is a convoluted one. Currently, India has the world‟s fourth largest GM crop acreage surpassing China‟s 3.0 million hectares (mh), while equaling that of Canada‟s 11.6 mh, according to the International Service for the Acquisition of Agri-Biotech Applications (ISAAA) mostly on the basis of GM Cotton, the only genetically modified crop allowed in the country.
- GM Mustard is the new GM crop in the block that is doing the rounds of constant speculation and has been cleared by the Genetic Engineering Approval Committee (GEAC), the biotech regulator in India under the Ministry of environment and forests with no such biosafety or public health concerns.
- Field trials for 21 GM food crops, including GM vegetables and cereals have been approved by the government though commercial cultivation of GM food has not been permitted by any State government in India till now.

Current Context:

- In 2010 the government placed an indefinite ban on commercial release of Bt brinjal, developed by Mahyco, and called for more independent scientific studies to establish its biosafety as India is a centre of diversity for brinjal, both domesticated as well as wild.
- The genetically modified brinjal is a suite of transgenic brinjals (also known as an eggplant or aubergine) created by inserting a crystal protein gene (Cry1Ac) from the soil bacterium Bacillus thuringiensis into the genome of various brinjal cultivars.

- The insertion of the gene, along with other genetic elements such as promoters, terminators and an antibiotic resistance marker gene into the brinjal plant is accomplished using Agrobacterium-mediated genetic transformation.
- The Bt brinjal has been developed to give resistance against lepidopteron insects, in particular the Brinjal Fruit and Shoot Borer (Leucinodes orbonalis) (FSB). Upon ingestion of the Bt toxin, the insect's digestive processes are disrupted, ultimately resulting in its death. It will reduce the farmers' dependence on pesticides and enable higher yields.
- Mahyco, an Indian seed company based in Jalna, Maharashtra, has developed the Bt brinjal.

Concerns

- This is clearly a failure of the government agencies concerned that illegal Bt brinjal is being cultivated in the country.
- This is not the first time this is happening. Bt cotton was approved in India after large-scale illegal cultivation was discovered in Gujarat.
- In late 2017, when illegal GM soy cultivation was discovered in Gujarat and a complaint lodged with GEAC, the response was quite slow and dangerously lackadaisical.

2 YEARS OF GST

Context:

The landmark goods and services tax (GST), launched on July 1, 2017, has completed two years. The one-nation, one-tax revolution has seen a few hiccups, but it's settling down and benefits should start to flow sooner rather than later.

What is GST?

- Goods & Services Tax Law in India is a comprehensive, multi-stage, destination-based tax that is levied on every value addition.
- In simple words, Goods and Service Tax (GST) is an indirect tax levied on the supply of goods and services. This law has replaced many indirect tax laws that previously existed in India.
- GST is one indirect tax for the entire country.

Current Status of GST

- GST is currently levied on every product except petroleum, alcohol, tobacco and stamp duty on real estate in four slabs of 5, 12, 18 and 28 per cent. Most of the daily use articles have zero GST as per the latest revision of the tax rates last year.
- 97.5 per cent articles covered by 18 per cent or lower GST slab. Under the previous, value-added tax (VAT) regime, standard taxation rate was much higher. only luxury and sin goods are now taxed at highest 28 per cent GST rate.

Achievements in last 2 years

- **Number of registered taxpayers:** The number of registered taxpayers at the time when the GST was rolled out was Rs 65 lakh, which today stands at Rs 1.2 crore, a jump of 84 per cent over the last two years. This shows a significant widening of the tax base and formalisation of the economy under the GST.
- **Monthly collection:** Monthly GST collections for July 2017, the first month for GST, were Rs 92,200 crore. Subsequently, it dropped to Rs 83,700 crore in November that year. Collections started picking up from the second year onwards with July 2018 collections at Rs 96,500 crore. In 2018-19, the average monthly collection was Rs 97,100 crore with collections breaching Rs 1 lakh crore on a regular basis.
- **Compliances:** After a slow start, the number of registered taxpayers who started complying with GST timelines, grew. For the first month (July 2017), only 38 lakh out of 68 lakh registered taxpayers had filed GSTR 3B returns by August 25. This figure has now almost doubled to 72.5 lakh by April 2019. E-way bill, an anti-evasion mechanism, came into existence from April 1, 2018. The number of e-way bills doubled from 2.8 crore in April 2018 to 5.49 crore in March 2019.
- **Rate rationalisation:** In the beginning over 200 goods were kept in the 28 per cent rate bracket. The number of goods under 28 per cent slab has been cut down to eight. There are other goods and services whose tax rates have been reduced. For example, GST on restaurant services has been brought down from 18 per cent to 5 per cent. GST rates on affordable housing projects have been reduced from 8 per cent to 1 per cent and on non-affordable housing projects from 12 per cent to 5 per cent.
- **Number of returns**: When the GST was rolled out, there was a provision for three monthly returns - for sales, for purchases and a composite return - and one annual return. When businesses complained about huge compliance burden due to the requirement of 37 returns being filed in a year, the GST Council did away with the purchase return. Now businesses have to file two returns - GSTR1 for sales and GSTR 3B, a composite return.

- **Centre-State Relations:** It has proved to be a successful template for Centre-State Relations as most decisions in the GST council have been unanimous. Centre has taken the states along in ironing out issues and also Council has proactively addressed issues as they arose.
- **Refund**: The process of refund has been fairly streamlined. Exporters of goods have been receiving refund directly from the customs and exporters of service are getting 90 % of the refund immediately. The issue of working capital blockage due to refusal of GST refund in the initial period has now been fairly sorted.

Concerns and Expectations

The initial period was very stressful for the trade and the government, but over a period of time it has stabilised to a large extent though many issues still remain unresolved.

- **Return filing:** After the initial issues and problems in filing monthly GST Returns the same has now stabilised. However, the new return filing system which is being proposed to be introduced in phased manner should not be implemented till the trade, professionals and the departmental authorities are fully conversant with the same. Change in the process in the middle of the year is cumbersome for all as accounting systems have to be amended for the same.
- **E-invoicing:** Introduction of e-invoicing is a welcome move. However, the introduction of the same at this stage appears to be a difficult proposition. Further clarity needs to be given as to the process of generation in case of system breakdowns.
- **Introduction of cess:** Introduction of Kerala Calamity Cess has been a cause of concern for all. There is a general apprehension that other States may also follow suit and introduce cess for some of the welfare schemes.
- **Notices for reconciliation:** Periodic notices even before the year is complete for differences in Input Tax credit claimed by the trade and as appearing in the GSTN network are putting a strain on trade and industry. Business and professionals are further confused as figures appearing in their GST Return, GSTR 2A appearing on GSTN network and figures stated in the notice sent by the department is different. The authorities also do not have any break-up on the basis of which notice has been sent.
- **Requirement for centralised assessment:** Business with multiple locations are finding it difficult to appear for assessment or inquiries before authorities in various states. The entire tax and accounting is normally centralised in large organisations. Hence, a long standing demand of the trade with locations in various states for assessment/audit in the main state would be a welcome move.
- **Frequent changes:** The trade and professionals are grappling with the frequent changes and notifications issued in the past two years. Though changes and amendments are required for clarity, but major amendments impact the decision making capacity of the trade.
- **Input tax credit:** Eligibility of input tax credit has been a bone of contention between trade and authorities from pre-GST era. Some of the judgements were very clear about ITC being an indefeasible right of assessee, small procedural errors should not hamper them, provisions cannot be used to extract money from the assessee etc. The condition for disallowability of ITC if vendors do not pay GST or file returns is a very harsh provision and needs to be revisited.

One must appreciate the fact that GST has managed to subsume many local, state and central taxes. Hiccups are expected in anything new, but after two years there has to be a climate of certainty with smooth GSTN network and minimum changes in law. The way things are functioning it appears that the journey is still midway for the authorities and businesses and much has still to be achieved. It cannot be said that there are only negatives, there are substantial positives. The emphasis should be on expanding the tax base, checking of tax evasion, simplification of procedures and glitch free GSTN system.

INTELLECTUAL PROPERTY RIGHTS

Context:
India continues to remain in the United States (US) 'Priority Watch List' for alleged violations of intellectual property rights (IPR).

What is Intellectual Property?

- Intellectual property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce.
- IP is protected in law by, for example, patents, copyright and trademarks, which enable people to earn recognition or financial benefit from what they invent or create. By striking the right balance between the interests of innovators and the wider public interest, the IP system aims to foster an environment in which creativity and innovation can flourish.

Need for IPRs

There are several compelling reasons.

- First, the progress and well-being of humanity rest on its capacity to create and invent new works in the areas of technology and culture.
- Second, the legal protection of new creations encourages the commitment of additional resources for further innovation.
- Third, the promotion and protection of intellectual property spurs economic growth, creates new jobs and industries, and enhances the quality and enjoyment of life.
- An efficient and equitable intellectual property system can help all countries to realize intellectual property's potential as a catalyst for economic development and social and cultural well-being.
- The intellectual property system helps strike a balance between the interests of innovators and the public interest, providing an environment in which creativity and invention can flourish, for the benefit of all.

Copyright

Copyright is a legal term used to describe the rights that creators have over their literary and artistic works. Works covered by copyright range from books, music, paintings, sculpture and films, to computer programs, databases, advertisements, maps and technical drawings.

Patent

A patent is an exclusive right granted for an invention, which is a product or a process that provides, in general, a new way of doing something, or offers a new technical solution to a problem. To get a patent, technical information about the invention must be disclosed to the public in a patent application.

Trademarks

A trademark is a sign capable of distinguishing the goods or services of one enterprise from those of other enterprises. Trademarks date back to ancient times when artisans used to put their signature or "mark" on their products.

Geographical Indication

A geographical indication (GI) is a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that origin. In order to function as a GI, a sign must identify a product as originating in a given place.

Legislative Structure to protect IPRs in India

- IPR-related issues in India like patents, trademarks, copyrights, designs and geographical indications are governed by the Patents Act 1970 and Patent Rules 2003, Trademarks Act 1999 and the Trademarks Rules 2002, Indian Copyrights Act, 1957, Design Act 2000 and Rules 2001, and The Geographical Indications of Goods (Registration & Protection) Act, 1999 and The Geographical Indications of Goods (Registration & Protection) Rules 2002, respectively.
- IPR plays a key role in almost every sector and has become a crucial factor for investment decisions by many companies. All the above Acts and regulations are at par with international standards. India is now TRIPS-compliant.
- TRIPS is an international agreement administered by the World Trade Organization (WTO), which sets down minimum standards for many forms of intellectual property (IP) regulation as applied to nationals of other WTO Members.
- The very well-balanced IPR regime in India acts as an incentive for foreign players to protect their Intellectual Property in India. This can be established by the very fact that approximately 80% of patent filings in India are from the MNCs.

Benefits of IPR

- It encourages and safeguards intellectual and artistic creation.
- It encourages investment in research and development efforts.
- It provides the consumers with the result of creation and invention.
- It enables the dissemination of new ideas and technologies quickly and widely.

Problems from IPR

- IPR has encouraged monopolies; many take over's have been motivated by access to an IPR.
- It may adversely affect biological diversity and ecological balance.
- Adversely affect the livelihood of the poor in developing countries.

Issues Related to IPR in India

- **lacks effective enforcement:** While the IPR regime in India consists of robust IP laws, it lacks effective enforcement, for which "least priority given to adjudication of IP matters" is often quoted as a reason. The key challenge is to sensitize the enforcement officials and the Judiciary to take up IP matters, at par with other economic offences, by bringing them under their policy radar.
- **Missing Think Tank:** it is imperative that there be established a 'Think Tank' or a group, which can bring the varied sets of stakeholders on to a common platform, leading to extensive/exhaustive and an all inclusive debate/discussion, facilitating well-informed policy decisions in accordance with India's socio-economic-political needs.
- **Compulsory Licensing:** Compulsory licensing is when a government allows someone else to produce a patented product or process without the consent of the patent owner or plans to use the patent-protected invention itself.
- **Patent evergreening:** Evergreening is the term used for legal and technological alternatives adopted by Pharmaceutical companies to extend their exclusivity of over production and sale of patented medicines beyond the prescribed statutory timeline of 20 years. To address the issue of evergreening, the Indian Parliament introduced Section 3(d) by way of 2005 Amendment to the Patents Act, 1970. Section 3(d) categorically excludes the derivatives, salts (trivial tweaks) to the known compound as not being inventions under the Act. The Supreme Court of India, in 2013, held Section 3(d) to be constitutionally valid
- The challenges also lie in having an IP fund, which can be utilized for further developing the IP culture in the country
- **Low Awareness**

Recent Controversies related to IPRs

- **The Special 301 Report:** The Office of the U.S. Trade Representative has once again placed India on 'Priority Watch List' in its annual Special 301 Report on the state of intellectual property protection. The report has slammed the Indian health ministry for "creating uncertainty in the pharmaceutical market" by demanding that pharmaceutical companies provide details of how they were using the granted patents.
- **Gujarat farmers vs Pepsico:** Recently the US multinational 'Pepsico' sued nine farmers for alleged "rights infringement" by "illegally" dealing with its registered potato variety used in its Lays chips. Although after discussions with the government, the company has agreed to withdraw cases against farmers.

Steps Taken by the government to protect IPRs

Apart from passing various legislations, GOI has taken various steps to ensure continuous and unending improvement of the Indian IP ecosystem in the country. To this effect, the DIPP has formulated a multi-pronged strategy to develop an Intellectual Property regime (IPR) in the country to promote creativity and to develop the culture of respect for innovations and creativity.

- The IP office has been transformed to enhance efficiency in processing of applications, uniformity and consistency in the examination of applications, bilateral cooperation at the international level, and raising the awareness level of the public.
- To modernise the administration, an additional 1,033 posts have been created -- 666 posts for patents and designs and 367 for trademarks and GI (geographical indicators) at various levels.
- Recruitment is underway and patent and trademarks examiners are being taken on contract to deal with the backlog, to cater to the immense flow of the papers filed, a single central server at IPO Delhi has also been put in place.
- Online e-filing facilities for patent and trademark application were introduced.Due to these steps, online filing has jumped from under 30 per cent to over 80 per cent in just a year.
- To increase transparency and dissemination of information, the real time status of IP applications and e-registers is now open to the public MSMEs
- To encourage for innovation and seek protection for their inventions, a 50 per cent fee reduction has been provided.
- Add IPR Awareness programs have been conducted in over 200 academic institutions, including rural schools through satellite communication, and for industry, police, customs and judiciary.
- Recently GOI has introduced a National IPR policy.

Way Forward

Due to Government's efforts, India's rank in the GII Report issued by WIPO has improved from 81st in 2015 to 57th place in 2018. There is no doubt that much more awareness about the creation, protection and enforcement of IPRs would go a long way to encourage the Indian industry not only to innovate but also to protect and enforce their innovations. GOI should try to implement the new IPR policy effectively so that the IP Rights are fully protected.

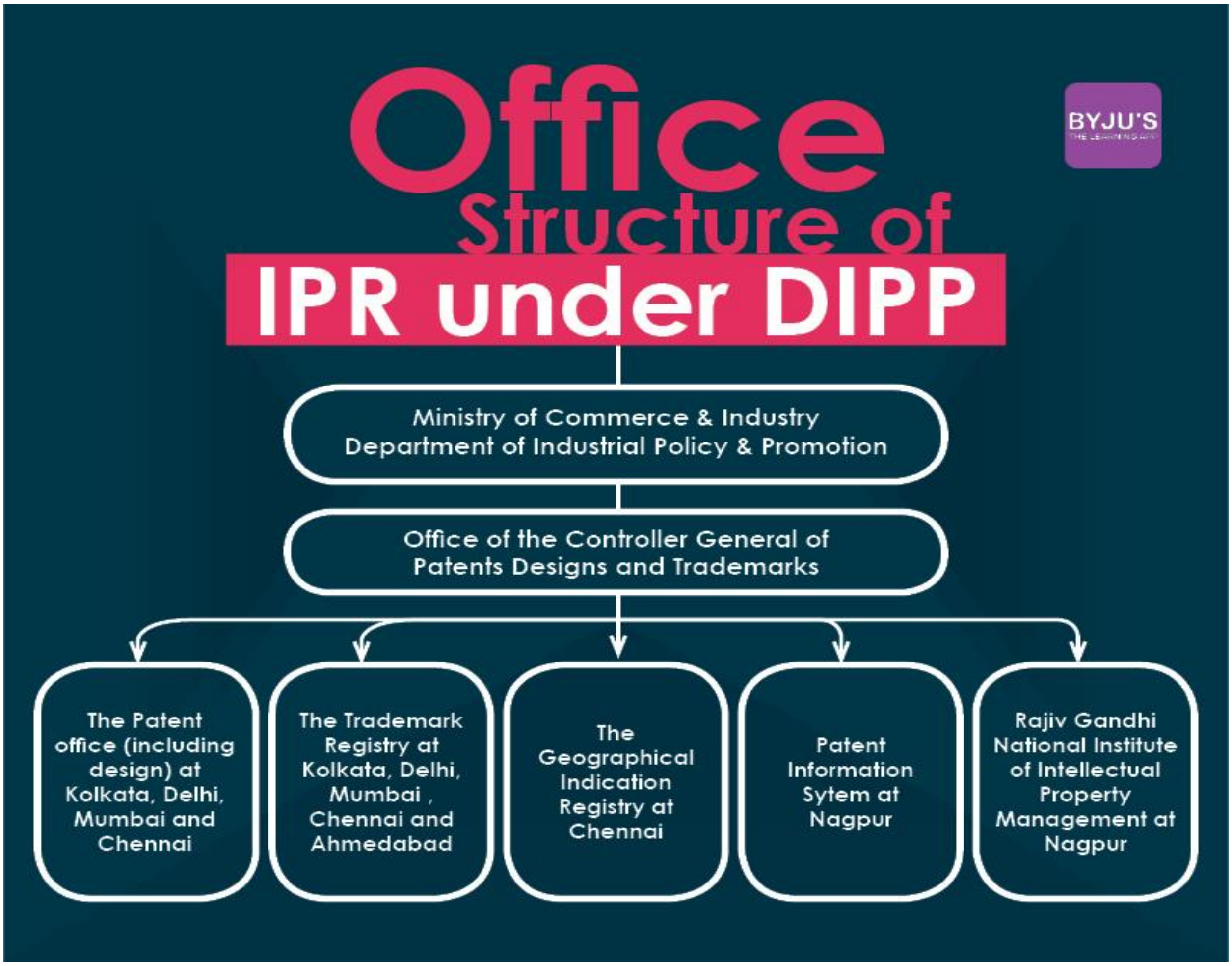
NATIONAL IPR POLICY

The government has brought out a National Intellectual Property Rights (IPR) policy to promote the IP regime and to encourage creativity, innovation and entrepreneurship in India and to check theft of one person's innovation by another. This is *India's first IPR policy.*

About the Policy:

The National IPR policy has been announced by the government with a tagline of 'Creative India,Innovative India' to incentivize entrepreneurship, creativity and innovation and curb manufacturing and sale of counterfeits.It promotes:

- An India where creativity and innovation are stimulated by Intellectual Property for the benefit of all;
- An India where intellectual property promotes advancement in science and technology, arts and culture, traditional knowledge and biodiversity resources;
- An India where knowledge is the main driver of development, and knowledge owned is transformed into knowledge shared.



Objective:

There are seven Major objectives:

- IPR, awareness, outreach, and promotion
- Create an atmosphere of inventibility and innovation
- Replace existing outdated laws

- Human Capital Development for teaching, research and skill building in IPRs
- Administration and management of innovation
- Commercialization of IPRs
- Combating IPR infringements by reinforcing the enforcement and adjudicatory mechanisms

The policy seeks to put in place a legal framework that will encourage the IPR regime and reduce the time taken by the government to approve a trademark to a month by 2017. Currently, the process takes more than a year.

Need for an IPR Policy:

- An IPR policy is important for the government to formulate incentives in the form of tax concessions to encourage research and development (R&D).
- The policy comes in the backdrop of the US Trade Representative (USTR), in its annual (2016 edition) Special 301 Report (on the Global State of IPR Protection and Enforcement) retaining India on the 'Priority Watch List' this year.
- It did so for the "lack of sufficient measurable improvements to its IPR framework."
- Though the U.S. concerns include the "rejections" of patent applications for innovative pharmaceutical products due to "unpredictable" application of Section 3(d) of the (Indian) Patents Act, the policy ensures that no changes are made in that Section (which prevents ever-greening of drug patents) and the patent-disabling Compulsory Licensing(CL) regime.
- It is essential to maintain the sanctity of innovations to ensure that the litigations in this domain are minimised.
- It will provide the required thrust to protect the traditional knowledge of India.
- It is also critical to strengthen the Make In India, Startup and Digital India schemes.

SALIENT FEATURES: Main highlights of the IPR Policy are:

- The Policy aims to realise IPR's as a marketable financial asset, promote innovation and entrepreneurship, while protecting public interest.
- The plan will be reviewed every five years in consultation with stakeholders.
- In order to have strong and effective IPR laws, steps would be taken — including review of existing IP laws — to update and improve them or to remove anomalies and inconsistencies.
- The policy is entirely compliant with the WTO's agreement on TRIPS.
- Special thrust on awareness generation and effective enforcement of IPRs, besides encouragement of IP commercialization through various incentives.
- India will engage constructively in the negotiation of international treaties and agreements in consultation with stakeholders.
- The government will examine accession to some multilateral treaties which are in India's interest, and become a signatory to those treaties which India has de facto implemented to enable it to participate in their decision making process.
- It suggests making the Department of Industrial Policy and Promotion (DIPP) the nodal agency for all IPR issues. Copyrights related issues will also come under DIPP's ambit from that of Ministry of Human Resource Development (MHRD).
- Modernization of trademark offices has been undertaken to reduce the time taken for examination and registration to just a month by 2017.
- Films, music, industrial drawings will be all covered by copyright.
- The Policy also seeks to facilitate domestic IPR filings, for the entire value chain from IPR generation to commercialization.
- It aims to promote research and development through tax benefits.
- Proposal to create an effective loan guarantee scheme to encourage start-ups.
- The policy allows the Government of India to leverage legislative flexibilities in the international treaties and TRIPS agreement. These flexibilities include the sovereign right of countries to use

provisions such as Section 3(d) and compulsory licensing(CLs) for ensuring the availability of essential and life-saving drugs at affordable prices.

- The policy left the country's patent laws intact and specifically did not open up Section 3(d) of the Patents Act, which sets the standard for what is considered an invention in India, for reinterpretation.
- On compulsory licensing (CL), India has issued only CL for a cancer drug.
- The government will examine accession to some multilateral treaties which are in India's interest; and, become signatory to those treaties which India has de facto implemented to enable it to participate in their decision making process. The international treaties and agreements referred to are international IP classification agreements, including the Nice and Vienna Classifications, and not pacts like the Trans Pacific Partnership, which apparently has TRIPS-plus provisions.

Advantages of the Proposed IPR policy regime:

- The National IPR Policy is a vision document that aims to create synergies between all forms of intellectual property, concerned statutes and agencies.
- It will likely bring India's IP regime in line with global standards and help improve its ranking in the World Bank's Ease of Doing Business index.
- The policy ensures credibility with potential investors and strategic partners encourages them to invest in India.
- It will also help substantially cut the time taken on clearing the backlog of intellectual property rights (IPR) applications.
- It focuses on enhancing access to healthcare, food security, environmental protection and prevents film and music piracy. For Ex, Indian Cinematography Act, 1952 may be amended to provide for penal provisions for illegal duplication of films.
- This policy shall weave in the strengths of the Government, research and development organizations, educational institutions, corporate entities including MSMEs, start-ups and other stakeholders in the creation of an innovation-conducive environment, which stimulates creativity and innovation across sectors, as also facilitates a stable, transparent and service-oriented IPR administration in the country.
- The policy seeks to promote R&D through tax benefits available under various laws and simplification of procedures for availing of direct and indirect tax benefits.
- Increasing awareness about IPR will help in building an atmosphere where creativity and innovation are encouraged, leading to generation of protectable IP that can be commercialized.
- Bringing the Copyright Act and the Semiconductor Integrated Circuits Layout-Design Act under the Department of Industrial Policy and Promotion (DIPP) would benefit industry and individuals.
- Commercial importance (of IPRs) will be better affected when it is under one roof due to better administrative convergence
- The IPR policy aim is to create awareness about economic, social and cultural benefits of IPRs among all sections of society.

Drawbacks:

- The IPR Policy states "India shall remain committed to the (World Trade Organization) Doha Declaration on (WTO) Trade Related IPR Agreement (TRIPS) and Public Health". There was, however, a bit of apprehension that mention of Doha Declaration and flexibility would mean there would be attempts to find loopholes in TRIPS in order to favour pharmaceutical companies.
- Unless the government is ready with funding and programmes to ensure access to medicine for all, any change in the legislative framework would hurt not only the generic industry, but the people of India.
- Though the policy is more vocal on the promotion of modern IP, its silence on the issue of traditional knowledge and the informal creativity/innovations based on it are significant.
- There is no evidence to show that the modern utility model and trade secret laws are useful to promote informal innovations.

- No serious efforts, however, are made to find out the actual need of IP in promoting creativity/innovations in both formal and informal sectors. The cursory importance to traditional knowledge and need for sui generis law for its protection without any details were clear indications.
- The measures suggested in the policy envisaged large government funding for protecting and promoting foreign IP in India even though it stated that the primary obligation of protecting IP rights was on the IP owners. Moreover, the reference to State legislations in the context of copyright protection showed how the balance in the policy was tilted in favour of IP holders against society.
- Experts also feel that the National IPR policy lacks specifics and won't be enough to foster innovation.
- Experts feel, the fundamental flaw is its assumption that more IP translates to more innovation! It fails to appreciate that IP is not an end in itself but a mere means to an end.
- Given this flawed assumption, according to the experts, the policy then advocates that all knowledge should be converted to IP.
- Even corporates today recognise that IP does not work well in certain technology sectors, for which a free flow of open knowledge is more suitable.
- Experts are also skeptical of the policy being applicable to the informal economy in rural areas.The reason is that, rural economy and creativity is not understood completely. Superimposing a formal IP regime here may do more harm than good
- Lastly, criminalising wrongs arising out of violation of the Indian Cinematograph Act is too harsh and disproportionate and uncalled for.
- IP wrongs are essentially civil wrongs and should not be criminalised.

Way Forward and Conclusion:

- There is no doubt that much more awareness about the creation, protection and enforcement of IPRs would go a long way to encourage the Indian industry not only to innovate but also to protect and enforce their innovations.
- There are still certain areas which would require further deliberations such as the principle of knowledge sharing and knowledge access. The utility models, so far, are not statutorily protected in India and the protection thereof under the policy may encourage the small and medium industry to protect their innovation.
- At the same time, there is a reasonable apprehension about the enlargement of the protection to the objects which fall in the public domain.
- Better copyright and trademark regime, as promised by the new framework, along with stronger enforcement, would attract more foreign investment into the country.
- The approach of the policy towards copyrights and trademarks appears to serve well the needs of foreign companies. Granting rights faster, and a strong enforcement, are also something that will encourage them.
- But a lot depends upon the way the government implements the policy. If the balance is lost we will discourage innovating companies. One great thing about the policy is the way it has addressed digital piracy,indicating stricter steps for addressing the issue.

CHANDRAYAAN 2 MISSION

- It is India's uncrewed Indian lunar mission which aims to get a better understanding of the Moon's origin and its evolution by conducting topographical studies and mineralogical analyses alongside a few other experiments on the Moon's Surface. According to ISRO, the mission Chandrayaan 2 will also foster the findings of Chandrayaan 1.
- While a few mature models do exist, the Moon's origin still needs further explanations. Extensive mapping of the lunar surface will aid us in studying variations in its composition — an essential piece of information in tracing the Moon's origin and evolution.
- The Chandrayaan 2 mission will target a completely unexplored section of the Moon that is, its "South Polar region".
- The mission is being considered as a challenge as no space agency has ever thought of exploring the South Polar Region of the Moon.
- The name Chandrayaan means Moon vehicle.

Why go to the Moon?

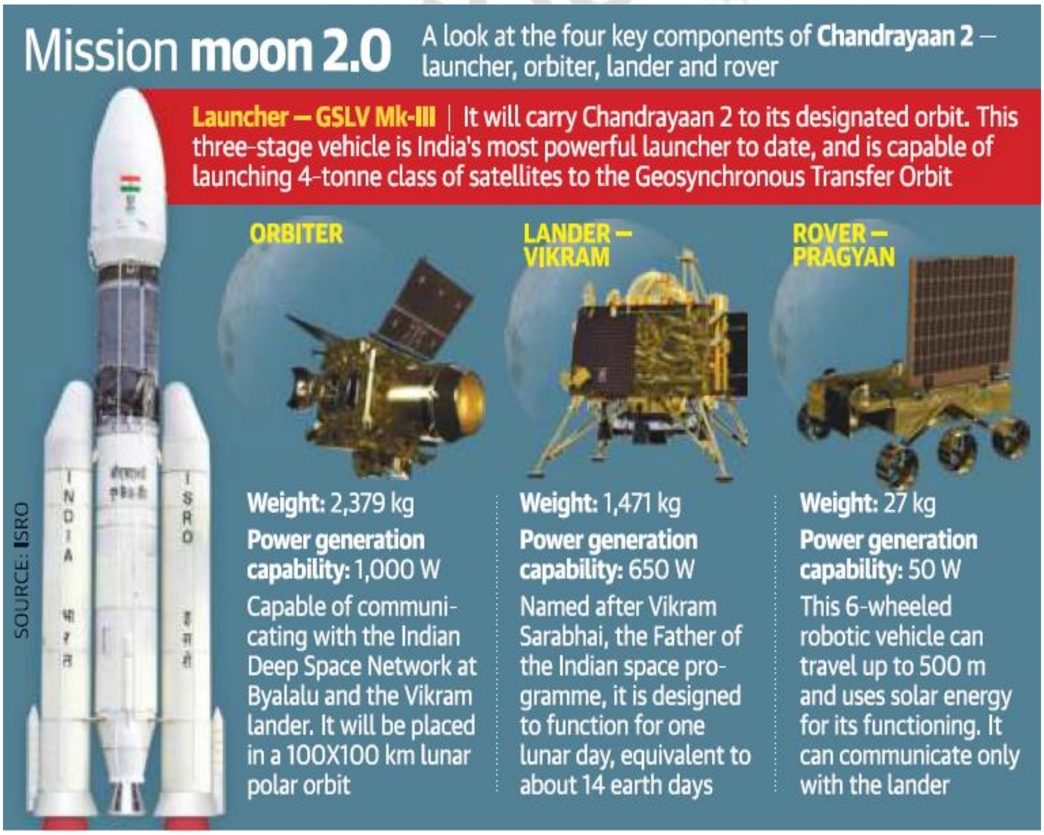
- The Moon is the closest cosmic body at which space discovery can be attempted and documented.
- It is also a promising test bed to demonstrate the technologies required for deep-space missions.

Launcher

- Geosynchronous Satellite Launch Vehicle Mark-III (GSLV Mk-III)

Its components are:

- S200 solid rocket boosters
- L110 liquid stage
- C25 upper stage



Chandrayaan-2 is composed of three modules

The orbiter, the Vikram lander (named after Vikram Sarabhai, the late father of India's space program) and the Pragyan rover (named after the Sanskrit word for wisdom).

- From orbit, instruments will create detailed three-dimensional maps of the surface, both to
    - ascertain the safety of potential landing sites and
    - To track the distributions of water molecules, hydrated minerals and other materials of interest on and around the moon.
- If touchdown is successful, the Vikram lander will serve as a listening station for seismic waves from moonquakes, which could reveal more details about the structure of the lunar core, mantle and crust.
- Further studies are set to take place via the Pragyan rover, which is meant to drill into the surface to gather samples for additional mineralogical and chemical analysis.

The orbiter, lander and rover will collectively carry 14 scientific payloads, including a Laser Retroreflector Array from NASA to provide precision measurements of the distance between Earth and the moon

Soft-Landing

- A soft-landing occurs when the rocket is designed to touch down as gently as possible.
- India would join the U.S., China and the former Soviet Union on the list of countries that have completed a "soft" moon landing, or a touchdown that doesn't result in a crash landing.

Here are the reasons why Chandrayaan 2 is on a mission to explore the Moon's South Polar Region and why it's a huge challenge:

1. The Dark Side of the moon – the importance of exploring Moon's South pole

- Due to the moon's axis, few regions on the South Pole remains forever dark especially the craters and have higher chances of containing water.
- The bottom of the polar craters of remain under shadows permanently because of the low angular tilt of the axis (1.54-degree tilt in comparison to earth's 23.5 degrees).
- Hence the temperature at the poles remains frigid, hitting as low as -248 degree Celcius. That makes it among the lowest temperatures in the Solar System.
- The sunlight strikes at very low angles in the Polar Regions and thus the craters might have never received sunlight, thereby increasing the chances of presence of ice on such surfaces.
- The moon's South Pole is especially interesting because the lunar surface area at the south pole of the Moon that remains in shadow is much larger than that of its north pole. This increases the possibility of the presence of water in permanently shadowed areas around it.

2. Totally Uncharted Territory

- No one has ever explored the South Polar Region of the Moon. In all the space missions, be it manned or unmanned, no country has ever attempted to land a spacecraft in the polar regions of the moon.
- The South Polar Region is far from the equator and it is totally uncharted till now. This could give India a lead in space exploration on an international level.
- The South Pole region has craters that are cold traps and contain a fossil record of the early Solar System.

Significance

- The success of the mission is going to boost national morale and contribute to [India's] scientific endeavors in ways ranging from academic research to national security.
- The mission is completely indigenous, with heavy participation from the private sector and academia, involving young scientists from across the country—a reflection of India's rising scientific temper.

Chandrayaan-1 Vs Chandrayaan-2

- Chandrayaan-1 was launched by India's Polar Satellite launch Vehicle — PSLV-C11 in 2008 from the Satish Dhawan Space Centre, Sriharikota. On the other hand, Chandrayaan-2 will be launched by the GSLV Mk-III.
- The Chandrayaan-1 spacecraft made more than 3,400 orbits around the Moon. Chandrayaan-1 was operational for 312 days till August 29, 2009. Chandrayaan-2's orbiter will continue its mission for around a year.
- There were 11 scientific instruments onboard the Chandrayaan-1 spacecraft. Five of them were Indian while the others were from European Space Agency (ESA), National Aeronautics and Space Administration (Nasa) and Bulgarian Academy of Sciences.
    - Chandrayaan-2's orbiter carries eight scientific payloads for mapping the lunar surface and to study the exosphere (outer atmosphere) of the Moon. The lander carries three scientific payloads to conduct surface and subsurface science experiments. The rover carries two payloads to enhance our understanding of the lunar surface. A passive experiment from Nasa will also be carried onboard Chandrayaan-2.
- Chandrayaan-1 conclusively discovered traces of water on the Moon. This was a path-breaking discovery. Chandrayaan-1 also discovered water ice in the north polar region of the Moon. It also detected magnesium, aluminium and silicon on the lunar surface. Global imaging of the Moon is another achievement of Chandrayaan-1 mission.
    - Chandrayaan-2 aims to widen the scientific objectives of Chandrayaan-1 by way of soft landing on the Moon and deploying a rover to study the lunar surface.

GENE-EDITING

Background

- He Jiankui Chinese researcher shocked the scientific community in 2018 after announcing he had successfully altered the genes of twin girls born in November to prevent them from contracting HIV.
- He had "privately" organised a project team that included foreign staff and used "technology of uncertain safety and effectiveness" for illegal human embryo gene-editing, investigators said.
- But such gene-editing work is banned in most countries, including China.

Cutting-and-pasting DNA (CRISPR-CAS9)

- CRISPR-CAS9 is a technology that allows scientists to essentially cut-and-paste DNA, raising hope of genetic fixes for a disease. However, there are also concerns about its safety and ethics.
- CRISPR is a dynamic, versatile tool that allows us to target nearly any genomic location and potentially repair broken genes. It can remove, add or alter specific DNA sequences in the genome of higher organisms.

How does it work?

- Unusual but repeated DNA structures that scientists had been observing for some time were given a name. This name assigned was "Clustered regularly interspaced short palindromic repeats" or CRISPR.
- In 2012, scientists discovered that CRISPR is a key part of the "immune system".
- For instance, when a virus enters a bacterium, it fights back by cutting up the virus's DNA.
- This kills the virus but the bacterium stores some of the DNA.
- The next time there is an invasion, the bacterium produces an enzyme called Cas9 which matches the stored fingerprints with that of the invader's.
- If it matches, Cas9 can snip the invading DNA.
- The CRISPR-Cas9 gene editing tool thus has two components. These are:

1. a short RNA sequence that can bind to a specific target of the DNA and
2. the Cas9 enzyme which acts like a molecular scissor to cut the DNA.

To edit a gene of interest, the short RNA sequence that perfectly matches with the DNA sequence that has to be edited, is introduced.
Once it binds to the DNA, the Cas9 enzyme cuts the DNA at the targeted location where the RNA sequence is bound.
Once the DNA is cut, the natural DNA repair mechanism is utilised to add or remove genetic material or make changes to the DNA.

What are the possible advantages of Gene editing?

- CRISPR could be used to modify disease-causing genes in embryos brought to term, removing the faulty script from the genetic code of that person's future descendants as well. Genome editing (Gene editing) could potentially decrease, or even eliminate, the incidence of many serious genetic diseases, reducing human suffering worldwide.
- It might also be possible to install genes that offer lifelong protection against infection.
- CRISPR May Prove Useful in De-Extinction Efforts. For example,Researchers are using the powerful gene-editing tool to recreate the woolly mammoth.
- CRISPR Could Create New, Healthier Foods: In agricultural crops, Crispr has the potential to impact yield, disease resistance, taste, and other traits. Few experiments have been done. If successful it can help us to eradicate the problem of hunger and malnutrition.

What are the cons of Gene editing?

- Making irreversible changes to every cell in the bodies of future children and all their descendants would constitute extraordinarily risky human experimentation.
- There are issues including off-target mutations (unintentional edits to the genome), persistent editing effects, genetic mechanisms in embryonic and fetal development, and longer-term health and safety consequences.
- Altering one gene could have unforeseen and widespread effects on other parts of the genome, which would then be passed down to future generations.
- Many consider genome alterations to be unethical, advocating that nature should be left to run its own course.
- Few argue that after permitting human germline gene editing for any reason would likely lead to its ignorance of the regulatory limits, to the emergence of market-based eugenics that would exacerbate already existing discrimination, inequality, and conflict.
- It will become a tool for selecting desired characteristics such as intelligence and attractiveness.
- It can also be used to eliminate dangerous species of pests and few experiments are being carried out on mosquitoes but eliminating a species, even one that doesn't appear to have much ecological value, could upset the careful balance of ecosystems. That could have disastrous consequences, such as disrupting the food web or increasing the risk that diseases like malaria could be spread by different species entirely.

Current scientific advancements show that CRISPR is not only an extremely versatile technology, it's proving to be precise and increasingly safe to use. But a lot of progress still has to be made; we are only beginning to see the full potential of genome-editing tools like CRISPR-Cas9. Technological and ethical hurdles still stand between us and a future in which we feed the planet with engineered food, eliminate genetic disorders, or bring extinct animal species back to life.

NITI Aayog's "Strategy for New India@75"

Context: NITI Aayog recently released the document "Strategy for New India@75" with the purpose of defining clear objectives for 2022-23 in a diverse range of 41 different areas. This aspirational strategy aims to achieve a 'New India' by 2022, when the country celebrates its 75th year of Independence.

Strategy for New India@75"

- 'Strategy for New India @ 75' has identified 41 different areas that require either a sharper focus on implementing the flagship schemes already in place or a new design and initiative to achieve India's true potential.
- Each chapter summarizes the current status of the sector, takes full cognizance of the progress made thus far and spells out the objectives.
- It then identifies the binding constraints and proposes measures to address these constraints.
- The approach is believed to provide an inventory of readily implementable measures for the government departments and agencies both in the central and state governments.
- The focus of the strategy is to further improve the policy environment in which private investors and other stakeholders can contribute their fullest towards achieving the goals set out for New India 2022.

Other details

- In the chapter focusing on ecological and related livelihood concerns, there are positive directions vis-à-vis the environment, such as a major focus on renewable energy, organic farming (with the zero budget natural farming model developed by Maharashtrian farmer Subhash Palekar being singled out for national application), increasing forest cover, and reducing pollution and waste.
- A chapter titled 'Sustainable environment' states: "The objective is to maintain a clean, green and healthy environment with peoples' participation to support higher and inclusive economic growth through sustainable utilization of available natural resources."
- It focus is primarily on air pollution, solid waste management, water pollution, and forestry.
- The strategy has many progressive objectives. It follows the UN Sustainable Development Goals. Inclusion, sustainability, participation, gender equality and other buzzwords find mention.

Issue:

- There are serious doubts if the strategy envisaged in the document relating to ecological and livelihood concerns, will be any different from the crisis-ridden society we live in today.
- For more than three decades, governments have been promising that with environmental safeguards, growth can be made sustainable.
- There is no indication that this is anywhere near achievable, much less achieved. In 2008, the Confederation of Indian Industry indicated that India was already using twice of what its natural resources could sustain, and that more than half its biocapacity had already been eroded. Things are likely only worse now. No party in power has shown what magic wand it can use to suddenly make growth sustainable. Indeed, no country in the world has been able to do this.
- From amongst the much larger number of environmental issues India faces, air pollution, solid waste management, water pollution, and forestry are only given much spotlight.
- Some other issues such as arresting land degradation and soil erosion, and water conservation are also mentioned elsewhere.
- But issues that need urgent attention such as increasing presence of toxic chemicals around us, the need to conserve a range of non-forest ecosystems do not find mention.
- Since colonial times, forests have remained predominant in the minds of decision-makers, as indicated by the fact that India still has only a Forest Department and no dedicated entity for grassland, marine and coastal, wetland, mountain, and desert conservation.

- An integrated, comprehensive view on how ecological issues can be integrated into all sectors is absent indicating that these issues are still not core to the mindset of the planners.
- There is a total absence of an understanding that the current form and goal of economic growth is inherently unsustainable.

Alarming features:
Examples of the internal contradictions in the document.
Mining:

- One of the biggest ecological and social disasters in India is mining, especially the large-scale open-cast type.
- NITI Aayog ignores this when it proposes a doubling of the extent of mining.
- The only concession is the suggestion to bring in "cutting-edge" technology to "limit environmental damage", which will most likely not solve the fundamental need to deforest areas.

Tourism:
- Another major sector with horrendous environmental impacts is tourism, as witnessed by the hill stations and the ruin that areas like Ladakh, Kutch and the island regions are facing.
- Yet, NITI Aayog recommends doubling the number of domestic tourist visits to over 3,200 million from 1,614 million in 2016.

River Valley Projects:
- It also urges prompt completion of a host of mega river valley projects that have proved to be ecological nightmares, including Pancheshwar in the fragile Himalaya, the Ken-Betwa link in Madhya Pradesh, and dozens in the Northeast that are going to choke up rivers and are being pushed ahead despite strong local opposition.

Agriculture:
- The agriculture chapters are in fact full of fault lines.
- For all the mention of organic farming, there is no clear direction to phase out chemical fertilizers and pesticides.
- The objective of sustainable farming is undermined by the following: "Phase out old varieties of seeds and replace them with hybrid and improved seeds". This is the kind of Green Revolution approach that has caused huge loss of agricultural biodiversity and resilience amongst small farmers.
- There is also no focus on dryland farming though most farmers are engaged in this.
- There is positive mention of organic farming models for replication, but nothing on the amazing work of dryland farmers (such as the Dalit women of the Deccan Development Society in Telangana) showing productive, sustainable, biodiverse agriculture with millets and women as the fulcrum.

Infrastructure Projects:
- One of the most alarming features of the document is its stress on rapid, single-window clearance of infrastructure and other projects.
- Any decent ecological assessment of a project needs a year of study (over all seasons), so the 180 days limit it suggests will mean short-cuts.
- This rush also means compromising on crucial processes of social assessment, public hearings, and participatory decision-making, as already seen in the last few years.
- There is nothing on the need to seek consent from local communities, though this is mandated under the Forest Rights Act, 2006, and the Panchayat (Extension to Scheduled Areas) Act, 1996.
- Governments in the last few years have a dismal record of safeguarding the environment and the livelihoods of Adivasis and other communities.
- They have found ways to bypass constitutional and policy safeguards these vulnerable sections are supposed to enjoy.

Conclusion:

- NITI Aayog's strategy for 2022 is replete with environmental and livelihood related contradictions.
- It is alarming that the most important "driver" for the lofty goals of the strategy is economic growth.
- While there is great focus on forest conservation, there is an urgent need to conserve non-forest ecosystems such as grasslands, wetlands, mountains, and deserts.
- Without a strong, unambiguous commitment to upholding these protections, and putting communities at the centre of decision-making, India @ 75 is going to be an even more unequal, unjust, and conflict-ridden society than India @ 50.
- We need to learn from the many alternative initiatives for food, water, energy, housing, education and health existing across India, which show the way to more just and sustainable livelihoods and ways of living.

PLASTIC WASTE IMPORTS TO INDIA GO UP

Context:

- In spite of a ban on the import of plastic waste into India, the influx of PET bottles has quadrupled from 2017 to 2018 thanks to legal loophole, says a Delhi-based environmentalist organisation, Pandit Deendayal Upadhyay Smriti Manch (PDUSM).
- "Indian firms are importing plastic scraps from China, Italy, Japan and Malawi for recycling and the imports of PET bottle scrap & flakes have increased from 12,000 tonnes in FY 16-17 to 48,000 tonnes in FY 17-18 growing @ 290%. India has already imported 25,000 MT in the first 3 months of FY 18-19," says a note by the organisation.

Details of the issue

- Government and industry estimates suggest that India consumes about 13 million tonnes of plastic and recycles only about 4 million tonnes.
- A lack of an efficient waste segregation system and inadequate collection is the root cause, according to experts, for much of the plastic not making its way to recycling centres.
- To incentivise domestic plastic recycling units, the government had banned the import of plastic waste, particularly PET bottles in 2015. In 2016, an amendment allowed such imports as long as they were carried out by agencies situated in Special Economic Zones. It's this loophole that's been exploited.

SOURCE: PDUSM. CENTRAL POLLUTION CONTROL BOARD. UNION ENVIRONMENT MINISTRY

Plastic Pollution

- Plastics are non-biodegradable, synthetic polymers. They are made-up of long chain hydrocarbons with additives and can be moulded into finished products.
- These polymers are broken into monomers such as ethylene, propylene, vinyl, styrene and benzene etc.
- Finally, these monomers are chemically polymerized into different categories of plastics.
- Two broad classes of plastic-related chemicals are of critical concern for human health—bisphenol-A or BPA, and additives used in the synthesis of plastics, which are known as phthalates

- Petroleum-based plastic is not biodegradable and usually goes into a landfill where it is buried or it gets into the water and finds its way into the ocean.
- Since plastic does not decompose into a natural substance like soil, it degrades (break down) into tiny particles after many years. In the process of breaking down, it releases toxic chemicals (additives that were used to shape and harden the plastic) which make their way into our food and water supply.
- These toxic chemicals are now being found in our bloodstream. Causing cancer, infertility, birth defects, impaired immunity and many other ailments.

Penetration of Plastic Pollution

- A major threat to oceans according to a 2017 International Union for Conservation of Nature (IUCN) report, micro plastics are estimated to constitute up to 30% of marine litter polluting the oceans.
- The ingestion of microplastics is very dangerous for humans as these substances contain high concentrations of toxic chemicals such as polychlorinated biphenyls.
- People living along rivers and coastlines in China, Indonesia, the Philippines, Thailand, and Vietnam are the most impacted by plastic pollution.
- Low-income communities face more health impacts near plastic production sites, have greater exposure to toxins and waste, and bear the brunt of the impacts of improper plastic disposal and incineration.
- Henderson Island in the South Pacific is the most plastic polluted of any island recorded to date.
- Studies show, eliminating all plastic, or using alternative materials such as paper and glass, could be more harmful to the environment than plastic itself.

PLASTIC WASTE MANAGEMENT RULES, 2016

The Plastic Waste Management Rules, 2016 aim to:

- Increase minimum thickness of plastic carry bags from 40 to 50 microns and stipulate minimum thickness of 50 micron for plastic sheets also to facilitate the collection and recycling of plastic waste
- Expand the jurisdiction of applicability from the municipal area to rural areas, because plastic has reached rural areas also
- To bring in the responsibilities of producers and generators, both in plastic waste management system and to introduce collect back system of plastic waste by the producers/brand owners, as per extended producers responsibility
- To introduce collection of plastic waste management fee through pre-registration of the producers, importers of plastic carry bags/multilayered packaging and vendors selling the same for establishing the waste management system
- To promote the use of plastic waste for road construction as per Indian Road Congress guidelines or energy recovery, or waste to oil etc. for gainful utilization of waste and also address the waste disposal issue.

What's new in Plastic Waste Management Rules, 2016

- Rural areas have been brought in the ambit of these Rules since plastic has reached to rural areas also. Responsibility for implementation of the rules is given to the Gram Panchayat.
- Extended Producer Responsibility: Earlier, EPR was left to the discretion of the local bodies. First time, the producers (i.e persons engaged in manufacture, or import of carry bags, multi-layered packaging and sheets or like and the persons using these for packaging or wrapping their products) and brand owners have been made responsible for collecting waste generated from their products. They have to approach local bodies for formulation of plan/system for the plastic waste management within the prescribed time frame.
- State Pollution Control Board (SPCBs) will not grant/renew registration of plastic bags, or multi-layered packaging unless the producer proposes the action plan endorsed by the concerned State Development Department.

- Producers to keep a record of their vendors to whom they have supplied raw materials for manufacturing carry bags, plastic sheets, and multi-layered packaging. This is to curb manufacturing of these products in unorganised sector.
- Plastic carry bag will be available only with shopkeepers/street vendors pre-registered with local bodies on payment of certain registration fee.
- Central Pollution Control Board (CPCB) has been mandated to formulate the guidelines for thermoset plastic (plastic difficult to recycle). In the earlier Rules, there was no specific provision for such type of plastic.

LIMITATIONS OF PLASTIC WASTE MANAGEMENT RULES, 2016

- One aspect that was not dealt with was the informal sector of waste collection**.** In Delhi, the informal sector employs about 150,000 people who transport almost 1,088 tonnes per day of recyclable waste. So a huge chunk of waste is excluded.
- There is no mention on how to reduce plastic waste in the new rules. While it has focused on the use of plastic carry bags by increasing the minimum thickness from 40 microns to 50 microns, there has been no specification on the other forms of plastics such as the mineral water bottles (PET).
- The producers have been reluctant in taking the onus of the waste despite various interventions across the country by government and civic societies.
- It does not include steps to spread awareness among the masses about plastic waste.

PLASTIC WASTE MANAGEMENT (AMENDMENT) RULES 2018

- The amended Rules lay down that the phasing out of Multilayered Plastic (MLP) is now applicable to MLP, which are "non-recyclable, or non-energy recoverable, or with no alternate use."
- The amended Rules also prescribe a central registration system for the registration of the producer/importer/brand owner.
- The centralised registration system will be evolved by Central Pollution Control Board (CPCB) for the registration of the producer/importer/brand owner.

Proposed alternatives and their limitations

- Compostable plastic bags – Compostable plastic cannot degrade in nature; it has to be separated from other waste and heated to 70 degrees Celsius at an industrial facility.
- Bioplastics –May not necessarily be biodegradable and may require very specific conditions to break down. They also do not solve the litter or throwaway culture problem.
- Glass containers – Studies show that making and moving glass bottles uses nearly five times more energy than plastic.
- Paper bags – considered greener than plastic. Analyses of both materials show plastic bag production causes significantly less air and water pollution.
- Micro plastic – Study has not shown if consuming micro plastic is harmful or not. It's an emerging area of research, one the World Health Organization is working to assess.
- Incineration – Creates other pollution and does not address the overproduction problem.
- Focusing on end of life like recycling or disposal – We can't recycle our way out of this crisis.
- Clean up – While cleanup efforts help reduce litter problems, they do not address the source of the problem and ignore the unseen plastic pollution – micro plastics.
- Throwaway alternatives – Replacing one single-use item with another does not necessarily solve the problem or help to address our throwaway culture.

An eco-friendly product, which is a complete substitute of the plastic in all uses, has not been found till date. In the absence of a suitable alternative, it is impractical and undesirable to impose a blanket ban on the use of plastic all over the country. The real challenge is to improve plastic waste management systems.

ARTIFICIAL INTELLIGENCE

AI is a constellation of technologies that enable machines to act with higher levels of intelligence and emulate the human capabilities of sense, comprehend and act. The natural language processing and inference engines can enable AI systems to analyse and understand the information collected. An AI system can also take action through technologies such as expert systems and inference engines or undertake actions in the physical world.

Global Developments in Artificial Intelligence

- Countries around the world are becoming increasingly aware of the potential economic and social benefits of developing and applying AI.
- In the area of core research in AI and related technologies, universities and research institutions from the US, China and Japan have led the publication volume on AI research topics between 2010 and 2016.
- Governance structures for enabling all the above mandates vary across countries. Many countries have instituted dedicated public offices such as Ministry of AI (UAE), and Office of AI and AI Council (U.K.) while China and Japan have allowed existing ministries to take up AI implementation in their sectoral areas.

Potential of AI

Artificial Intelligence has the potential to provide large incremental value to a wide range of sectors globally, and is expected to be the key source of competitive advantage for firms.

- Healthcare: Application of AI in healthcare can help address issues of high barriers to access to healthcare facilities, particularly in rural areas that suffer from poor connectivity and limited supply of healthcare professionals. This can be achieved through implementation of use cases such as AI driven diagnostics, personalised treatment, early identification of potential pandemics, and imaging diagnostics, among others.
- Agriculture: AI holds the promise of driving a food revolution and meeting the increased demand for food. It can address challenges such as inadequate demand prediction, lack of assured irrigation, and overuse / misuse of pesticides and fertilisers. Some use cases include improvement in crop yield through real time advisory, advanced detection of pest attacks, and prediction of crop prices to inform sowing practices.
- Smart Mobility, including Transports and Logistics: Potential use cases in this domain include autonomous fleets for ride sharing, semi-autonomous features such as driver assist, and predictive engine monitoring and maintenance. Other areas that AI can impact include autonomous trucking and delivery, and improved traffic management.
- Retail: The retail sector has been one of the early adopters of AI solutions, with applications such as improving user experience by providing personalised suggestions, preference-based browsing and image-based product search. Other use cases include customer demand anticipation, improved inventory management, and efficient delivery management.
- Manufacturing: It can enable 'Factory of the Future' through flexible and adaptable technical systems to automate processes and machinery to respond to unfamiliar or unexpected situations by making smart decisions. Impact areas include engineering, supply chain management, production, maintenance, quality assurance, and in-plant logistics and warehousing.
- Energy: Potential use cases in the energy sector include energy system modelling and forecasting to decrease unpredictability and increase efficiency in power balancing and usage. In renewable energy systems, AI can enable storage of energy through intelligent grids enabled by smart meters, and also improve the reliability and affordability of photovoltaic energy. Similar to the manufacturing sector, AI may also be deployed for predictive maintenance of grid infrastructure.
- Smart Cities: Integration of AI in newly developed smart cities and infrastructure could also help meet the demands of a rapidly urbanising population and providing them with enhanced quality of

life. Potential use cases include traffic control to reduce congestion and enhanced security through improved crowd management.

- Education and Skilling: AI can potentially solve for quality and access issues observed in the Indian education sector. Potential use cases include augmenting and enhancing the learning experience through personalised learning, automating and expediting administrative tasks, and predicting the need for student intervention to reduce dropouts or recommend vocational training.

CHALLENGES WITH AI IN INDIA

a. Absence of collaborative effort between various stakeholders

b. concerns on privacy and security of data, including lack of formal regulation around anonymisation of data.

c. Lack of adequate talent to build and deploy AI systems at scale. An estimate claims that only 4% of AI professionals in India have worked on emerging technologies such as deep learning and neural networks. There is also a significant gap of PhD research scholars in the field.

d. Difficulty in access to industry specific data required to build customised platforms and solutions currently concentrated in the hands of a few major players. It is difficult for new entrants to deliver tailor made services that can compete with data rich incumbents such as Facebook or Google. This phenomenon results in the creation of a virtuous cycle which reinforces the hegemony of the big few, creating a huge entry barrier for startups.

e. High cost and low availability of computing infrastructure required for development, training and deployment of AI based services. Cloud infrastructure, though growing rapidly, has limited capability. Lack of infrastructure has led to many Indian AI startups to incorporate their business outside the country, which makes AI outside the reach of Indian researchers in government labs and many industries. Initiatives like **GI Cloud (MeghRaj)**, are in the right direction.

f. Low awareness of AI for resolving business problems in most public enterprises and government agencies, especially given the scarcity of AI professionals, is obstructing adoption.

WAY FORWARD TO HARNESS THE POWER OF AI

1. Incentivising Core and Applied research in AI: Advanced research, both core and applied, provides the basis for commercialisation and utilisation of any emerging technology, more so for technologies like AI. A concerted effort is needed to build a comprehensive research focused AI strategy for India.
2. Getting India ready for the AI wave: India may appear to be relatively well positioned to take advantage of the AI disruption by virtue of its advanced IT sector and large youth demographic potential to establish itself as the future hub for AI related activities. However, given the poor availability of qualified faculty and researchers, this advantage could quickly transform into a liability without urgent government interventions towards promoting access to such skills. This is a critical component of AI development, and should be a national priority.
3. Accelerating Adoption: Adoption of AI in India has been slow and remains limited. Estimates indicate that only 22% of the firms in India use AI in any business process. Government intervention is needed to promote AI adoption, lest India lose the chance to secure a prominent position on the global AI map. While acknowledging the need to promote AI,governments at different levels, along with their various instrumentalities, should adopt proactive measures to accelerate AI adoption in various processes.
4. Ethics, Privacy, Security and Artificial Intelligence: AI is going to be the tipping point in technological evolution of mankind, with human dependence on machines and algorithms for decision making never been such deep. Thus, any strategy document on promoting AI, necessarily needs to be conscious of the probable factors of the AI ecosystem that may undermine ethical conduct, impinge on one’s privacy and undermine the security protocol. Appropriate steps to mitigate these risks need to be an integral part of any such strategy. For eg: National Cyber Security Policy (NCSP – 2013) talks about Sensitization of citizens, consumers and employees on cyber security threats and basic and best practices Sensitization towards protection of personal information against cyber threats and in pursuance of security programs.

These challenges, while by no means exhaustive, if addressed in an expeditious manner through concerted collaborative efforts by relevant stakeholders, with government playing a leading role, could lead to fundamental building blocks that form the core to India’s march towards leadership in AI.

TRANS FATS

Context:
The WHO has welcomed its partnership with the International Food and Beverage Alliance (IFBA) to achieve the target of eliminating industrially produced trans fats by 2023.

Details:
- Trans fat, also called the worst form of fat in food, responsible for over 5, 00,000 deaths globally from coronary heart disease each year.
- The WHO says that eliminating industrially produced trans-fat is one of the simplest and most effective ways to save lives and create a healthier food supply.
- WHO met with IFBA to discuss actions to eliminate industrial Trans fats, and reduce salt, sugar and saturated fats in processed foods.
- The meeting also stressed the value of regulatory action on labelling, marketing and urged industry for full adherence to the WHO code of marketing of breast milk substitutes.
- The commitment made by the IFBA is in line with the WHO's target to eliminate industrial trans fat from the global food supply by 2023.
- It is decided by IFBA to ensure that the amount of industrial trans fat in their products does not exceed 2 gram per 100 g fat/oil globally by 2023.

Trans-fat:
- Trans fats are the most harmful type of fats which can have much more adverse effects on our body than any other dietary constituent.
- These fats are largely produced artificially but a small amount also occurs naturally.
- Artificial TFAs are formed when hydrogen is made to react with the oil to produce fats resembling pure ghee/butter.
- The major sources of artificial TFAs are the partially hydrogenated vegetable oils (PHVO)/vanaspati/ margarine.
- It poses a higher risk of heart disease than saturated fats. Saturated fats raise total cholesterol levels; TFAs not only raise total cholesterol levels but also reduce the good cholesterol (HDL).

Trans fat and India
- In 2003, Denmark became the first country to ban trans fats in foods. After Denmark removed trans fat from food in 2003, Chile, Norway, Singapore, South Africa and Ecuador, Austria, Hungary and Latvia have followed suit. But in India this killer ingredient remains at large in food.
- As of now, the Food Safety and Standards Authority of India (FSSAI) does not have any data on compliance and is in the process of testing products to see if the industry has adhered to the regulation.
- This is important considering that India now plans to be a zero trans fats nation by 2022, a year earlier than the timeline set by World Health Organization.
- With this, the trans fats in vanaspati /bakery shortening/margarine would be less than 2 per cent to bring the level of trans fats to zero in food. To help the industry, this would be implemented in a phased manner.
- After years of efforts by activists, the trans fats standards in the country were set down at 10 per cent in 2013, which was then reduced to 5 per cent in 2017.

Draft Food Safety and Standards (Labelling and Display) Regulations, 2019
- Food Safety and Standards Authority of India's (FSSAI) recently introduced draft Food Safety and Standards (Labelling and Display) Regulations, 2019. The draft (put out for comments on the FSSAI website on July 2, 2019), when adopted, will supersede the existing Food Safety and Standards (Packaging and Labelling) Regulations, 2011.

- The draft regulations for packaged foods addresses labelling gaps and adopts some of the global best practices aimed at limiting in take of packaged foods high in fats, sugar or salt.
- Calls for declaring quantity of salt, added sugar, saturated fats and trans fats and mentioning serving size, number of servings and per serve percentage contribution of a particular nutrient to the recommended dietary allowance (RDA)
- Introduces 'front-of-pack' labelling along with red-coloured warning symbol to help identify foods high in calories, saturated fats, trans fats, added sugar and salt
- CSE believes proposed draft will enable people to identify unhealthy packaged foods and help address growing incidence of obesity and non-communicable diseases in the country.

Trans fat free' logo

- Bakeries, sweet shops and other food business operators can voluntarily display 'trans fat free' logo on food products and in their outlets, according to the food safety regulator FSSAI.
- The logo 'trans-fat free' can be used provided the food establishment's uses trans-fat free fats oils, and do not have industrial trans-fat more than 0.2 gram per 100 gram of the food.
- It will be the responsibility of the food business operators to comply with the requirements as specified in the Food Safety and Standards (Advertising and Claims) Regulations 2018.

Relevance to India:

- India has among the highest number of coronary heart disease cases in the world and must try to beat the deadline.

CLIMATE CHANGE

Context:

- India has questioned the rush at the UN to declare climate change an international security issue, potentially giving the Security Council the right to take action on it, and pointed out the pitfalls in the approach.
- According to India, A "mere decision of the Council" to takeover enforcement of climate change action would disrupt the Paris Agreement and multilateral efforts to find solutions.

Climate change is a global threat to security in the 21st century. We must act now to limit future risks to the planet we share and the peace we seek.

Evidence for rapid climate change

- Global Temperature Rise: The planet's average surface temperature has risen about 1.62 degrees Fahrenheit (0.9 degrees Celsius) since the late 19th century, a change driven largely by increased carbon dioxide and other human-made emissions into the atmosphere. Most of the warming occurred in the past 35 years, with the five warmest years on record taking place since 2010.
- Warming Oceans: The oceans have absorbed much of this increased heat, with the top 700 meters (about 2,300 feet) of ocean showing warming of more than 0.4 degrees Fahrenheit since 1969.
- Shrinking Ice Sheets: The Greenland and Antarctic ice sheets have decreased in mass. Data from NASA's Gravity Recovery and Climate Experiment show Greenland lost an average of 286 billion tons of ice per year between 1993 and 2016, while Antarctica lost about 127 billion tons of ice per year during the same time period. The rate of Antarctica ice mass loss has tripled in the last decade.
- Glacial Retreat: Glaciers are retreating almost everywhere around the world — including in the Alps, Himalayas, Andes, Rockies, Alaska and Africa.
- Decreased Snow Cover: Satellite observations reveal that the amount of spring snow cover in the Northern Hemisphere has decreased over the past five decades and that the snow is melting earlier.
- Sea Level Rise: Global sea level rose about 8 inches in the last century. The rate in the last two decades, however, is nearly double that of the last century and is accelerating slightly every year.
- Declining Arctic Sea Ice: Both the extent and thickness of Arctic sea ice has declined rapidly over the last several decades.
- Extreme Events: The number of record high temperature events in the United States has been increasing, while the number of record low temperature events has been decreasing, since 1950. The U.S. has also witnessed increasing numbers of intense rainfall events.
- Ocean Acidification: Since the beginning of the Industrial Revolution, the acidity of surface ocean waters has increased by about 30 percent.13,14 This increase is the result of humans emitting more carbon dioxide into the atmosphere and hence more being absorbed into the oceans. The amount of carbon dioxide absorbed by the upper layer of the oceans is increasing by about 2 billion tons per year.

"A New Climate for Peace: Taking Action on Climate and Fragility Risks", an independent report commissioned by members of the G7, identifies seven compound climate-fragility risks that pose serious threats to the stability of states and societies in the decades ahead:

1. **Local resource competition:** As the pressure on natural resources increases, competition can lead to instability and even violent conflict in the absence of effective dispute resolution.
2. **Livelihood insecurity and migration:** Climate changes will increase the human insecurity of people who depend on natural resources for their livelihoods, which could push them to migrate or turn to illegal sources of income.
3. **Extreme weather events and disasters:** Extreme weather events and disasters will exacerbate fragility challenges and can increase people's vulnerability and grievances, especially in conflict-affected situations.

4. **Volatile food prices and provision:** Climate change is highly likely to disrupt food production in many regions, increasing prices and market volatility, and heightening the risk of protests, rioting, and civil conflict.
5. **Transboundary water management:** Transboundary waters are frequently a source of tension; as demand grows and climate impacts affect availability and quality, competition over water use will likely increase the pressure on existing governance structures.
6. **Sea-level rise and coastal degradation:** Rising sea levels will threaten the viability of low lying areas even before they are submerged, leading to social disruption, displacement, and migration, while disagreements over maritime boundaries and ocean resources may increase.
7. **Unintended effects of climate policies:** As climate adaptation and mitigation policies are more broadly implemented, the risks of unintended negative effects—particularly in fragile contexts—will also increase.

Policy Analysis: The Need for an Integrated Agenda

The best way to diminish the threat posed by these climate-fragility risks is to mitigate climate change. However, changes to the climate are already underway, so we must take steps to manage and minimize these risks today. To break down the sectoral barriers that hamper efforts to address climate-fragility risks, we need to address key policy and institutional gaps in three areas:

- **Climate change adaptation:** programmes help countries anticipate the adverse effects of climate change and take action to prevent, minimize, and respond to its potential impacts.
- **Development and humanitarian aid programmes** help states and populations build their economic, governance, and social capacities and improve their resilience to shocks.
- **Peacebuilding and conflict prevention programmes** address the causes and effects of fragility and conflict by reducing tensions and creating an environment for sustainable peace.

INDIA AND CLIMATE CHANGE

Why is climate change relevant for India?

India is among the countries most vulnerable to climate change. It has one of the highest densities of economic activity in the world, and very large numbers of poor people who rely on the natural resource base for their livelihoods, with a high dependence on rainfall. By 2020, pressure on India's water, air, soil, and forests is expected to become the highest in the world.

One of the most significant ways that climate change will impact the lives of people in India will be through its water resources. While water sustains life, it all too often wreaks havoc through devastating floods and droughts. A changing climate will only aggravate these shocks.

Potential Effects of climate change in India

- **Extreme Heat:** India is already experiencing a warming climate. Unusual and unprecedented spells of hot weather are expected to occur far more frequently and cover much larger areas. Under 4°C warming, the west coast and southern India are projected to shift to new, high-temperature climatic regimes with significant impacts on agriculture.
- **Changing Rainfall Patterns:** A decline in monsoon rainfall since the 1950s has already been observed. A 2°C rise in the world's average temperatures will make India's summer monsoon highly unpredictable. At 4°C warming, an extremely wet monsoon that currently has a chance of occurring only once in 100 years is projected to occur every 10 years by the end of the century. Dry years are expected to be drier and wet years wetter.
- **Droughts:** Evidence indicates that parts of South Asia have become drier since the 1970s with an increase in the number of droughts. Droughts have major consequences. In 1987 and 2002-2003, droughts affected more than half of India's crop area and led to a huge fall in crop production. Droughts are expected to be more frequent in some areas, especially in north-western India, Jharkhand, Orissa and Chhattisgarh. Crop yields are expected to fall significantly because of extreme heat by the 2040s.
- **Groundwater:** Even without climate change, 15% of India's groundwater resources are overexploited. Falling water tables can be expected to reduce further on account of increasing demand for water from a growing population, more affluent life styles, as well as from the services sector and industry.
- **Glacier Melt:** Most Himalayan glaciers have been retreating over the past century. At 2.5°C warming, melting glaciers and the loss of snow cover over the Himalayas are expected to threaten the stability and reliability of northern India's primarily glacier-fed rivers. Alterations in the flows of the Indus, Ganges, and Brahmaputra rivers could significantly impact irrigation, affecting the amount of food that can be produced in their basins as well as the livelihoods of millions of people
- **Sea level rise:** With India close to the equator, the sub-continent would see much higher rises in sea levels than higher latitudes. Sea-level rise and storm surges would lead to saltwater intrusion in the coastal areas, impacting agriculture, degrading groundwater quality, contaminating drinking water, and possibly causing a rise in diarrhea cases and cholera outbreaks, as the cholera bacterium survives longer in saline water. Kolkata and Mumbai, both densely populated cities, are particularly vulnerable to the impacts of sea-level rise, tropical cyclones, and riverine flooding.
- Apart from this food and energy security are also the major concerns. Water scarcity, health hazards among the masses and migration and political conflicts are expected to grow.

India's response to Climate Change

- National Action Plan on Climate Change (NAPCC): outlines existing and future policies and programs addressing climate mitigation and adaptation. The Action Plan identifies eight core "national missions" running through to 2017: Solar Energy; Enhanced Energy Efficiency; Sustainable Habitat; Water; Sustaining the Himalayan Eco-system; Green India; Sustainable Agriculture; and Strategic Knowledge for Climate Change. Most of these missions have strong adaptation imperatives.

- National Clean Energy Fund: The Government of India created the National Clean Energy Fund (NCEF) in 2010 for the purpose of financing and promoting clean energy initiatives and funding research in the area of clean energy in the country. The corpus of the fund is built by levying a cess of INR 50 (subsequently increased to INR 100 in 2014) per tonne of coal produced domestically or imported.
- Paris Agreement: Under the Paris Agreement, India has made three commitments. India's greenhouse gas emission intensity of its GDP will be reduced by 33-35% below 2005 levels by 2030. Alongside, 40% of India's power capacity would be based on non-fossil fuel sources. At the same time, India will create an additional 'carbon sink' of 2.5 to 3 billion tonnes of Co2 equivalent through additional forest and tree cover by 2030.
- International Solar Alliance: ISA was launched at the United Nations Climate Change Conference in Paris on 30 November, 2015 by India and France, in the presence of Mr. Ban Ki Moon, former Secretary General of the United Nations.
- Bharat Stage (BS) Emission Norms: Emissions from vehicles are one of the top contributors to air pollution, which led the government at the time to introduce the BS 2000 (Bharat Stage 1) vehicle emission norms from April 2000, followed by BS II in 2005. BS III was implemented nationwide in 2010. However, in 2016, the government decided to meet the global best practices and leapfrog to BS VI norms by skipping BS V altogether.

All these efforts need to implement well to mitigate the effects of the climate change.

Future: How India can cope with climate change effects

An 'adaptation' approach is the way to go. For this, a big push must be given to inter-linking of rivers and the use of GM crops. Climate action has globally been 'mitigation-centric' — most of the programmes (such as push for renewable energy and electric vehicles) are aimed at slowing down future global warming. 'Mitigation' is more important to developed countries, but for countries like India the focus should be on 'adaptation', or measures taken to cope with the inevitable effects of climate change that has already happened, such as nasty storms, floods and droughts.

'Adaptation' is like protecting yourself against a punch that will land. India has also been mitigation-centric; it is time to bring focus on 'adaptation'. And for adaptation, the time has come for two major steps.

- The first is to give a big push to a 150-year-old idea — inter-linking of rivers (ILRs). With floods and droughts likely to occur in different parts of the countries, possibly alongside each other, there is no option but to make ILR happen, and fast. here are two components of it: the Himalayan and the Peninsular, with 14 and 16 links respectively. The idea is to build a dam on one river so that the water level rises at the head of canal, allowing water to flow by gravity to the next river. India today has 5,100 large dams, which have walls at least 15 metres tall; ILR will require 3,000 more. The project will also involve building 15,000 km of new canals. If brought to fruition, ILR will bring 35 million hectares — over twice the size of Andhra Pradesh — of additional land into cultivation, and 34,000 MW more of hydro electricity.
- The other adaptive measure is genetically modified crops. GM technology is a major component of 'climate-smart agriculture'. We would need drought-resistant crops, and crops that produce more on the same patch of land so that climate-impairing 'land use' is minimised. India has been saying 'no' to GM technology, more out of the fear of the unknown than any scientific reasoning. Seeing ghosts in every dark corner is not going to help. GM technology has been in use globally for over two decades and millions of people have been eating GM foods for years.

RAT HOLE MINING

Context:

On 13 December, at least 15 workers were trapped in a 320-350 feet-deep coal mine in the East Jaintia Hills district of Meghalaya after it was flooded by waters of the nearby Lytein river. Rescue operations led by the National Disaster Response Force and the Indian Navy are on to locate the trapped workers. The recent mishap is one of several such accidents that have taken place over the past few years, leading to the death of workers.

What is rat-hole mining?

- It is a primitive and hazardous method of mining for coal, with tunnels that are only 3-4 feet in diameter (hence, rat-hole), leading to pits ranging from 5-100 sq. mt deep.
- There are two types of rat-holes: when dug into the ground these are vertical shafts leading to the mines where horizontal tunnels are dug; the second type is where horizontal holes are dug directly in the hillsides to reach coal seams (bed of coal). The coal is taken out manually, loaded into a bucket or a wheelbarrow and dumped on a nearby un-mined area. From here, it is carried to larger coal dumps near highways for trade and transportation.

Is rat-hole mining illegal?

Yes. The National Green Tribunal banned rat-hole mining in Meghalaya in 2014 on a petition that said acidic discharge from the mines was polluting the Kopili river. But the practice continues unabated.

How does it hamper the environment?

Water from rivers and streams in the mining area has become unfit for drinking and irrigation, and is toxic to plants and animals. A study by the North-Eastern Hill University, Shillong, says the Kopili river has turned acidic due to the discharge of acidic water from mines and the leaching of heavy metals. Layers of rock above the coal removed during mining contain traces of iron, manganese and aluminium that get dissolved from mining sites through the acid run-off or are washed into streams as sediment.

Other Concerns

- Coal mine owners have left thousands of abandoned mines. The State does not insist that they reclaim and afforest those mines.
- In 40 years of mining and profiteering, the mine owners have till date not constructed a single hospital or even a school. There is complete disregard for corporate social responsibility because the mines are privately owned by the tribals.

How does the ban affect local people?

Mining has provided jobs to local people. Following the ban, there are demands for rehabilitation or alternative employment. It was a major issue in the assembly polls. The new state government challenged the ban in the Supreme Court in November that allowed the transportation of already extracted coal till 31 January. A citizens' report filed in the apex court names several state legislators who have stakes in the largely unregulated coal mining and transportation industry.

Voices of Civil Society is divided

- Those who care for the environment and for a future for their children and grandchildren have been clamouring for an end to the practice of rat-hole mining and reckless limestone mining.
- On the other hand, the mining elite have mobilised forces to demonise environmental activists.
- The other troubling factor is that coal mine owners are insisting that since Meghalaya is a State under the Sixth Schedule of the Constitution, national mining laws should be exempted here.
- The Sixth Schedule was enacted to protect the community rights of tribals from any form of exploitation of their land and resources.
- But the coal mines of Khasi and Jaintia were nationalised under the Coal Mines (Nationalisation) Act, 1973. Also paragraph 9 of the Sixth Schedule clearly stipulates the need for "Licences or leases for

the purpose of prospecting for, or extraction of, minerals”. In addition, it is legally established that all central mining and environmental laws are applicable to the coal mines in Meghalaya.

INVASIVE ALIEN SPECIES

Context:
Rajasthan Authorities are on alert after locust attack warning.

What is desert locust?

- The desert locust (Schistocerca gregaria) is a species of locust, a swarming short-horned grasshopper in the family Acrididae. Plagues of desert locusts have threatened agricultural production in Africa, the Middle East, and Asia for centuries.
- The desert locust is an invasive species that is both well known and feared because of the large-scale agricultural damage it can cause.
- Desert locusts are a major pest on numerous crops and pastures throughout a vast area of almost 30 million km2 covering Africa north of the equator, the Near East, the Arabian Peninsula and the Indian subcontinent. Like other locusts, desert locusts can switch from a solitary phase with low population densities during recessions (periods of calm), to a gregarious phase with high population densities during invasions, when hopper bands and swarms can devastate agriculture.

Recent Issue

- In the wake of a locust attack threat from across the Pakistan border, authorities here have gone on an alert to deal with a swarm of the tropical grasshoppers entering India since the insects can devastate standing crops.
- However, the locust threat is only confined to nearby villages as the insect cannot fly long distances. However, it spreads with the help of the wind or desert storm which occurs during the summer season in the Rajasthan desert.
- After locust sightings in border villages around Jaisalmer, the Jodhpur-headquartered Locust Warning Organisation (LWO) has stepped up efforts to tackle any major attack by the grasshoppers by conducting a mock drill and is ready with an adequate stock of pesticides.

What are Alien Invasive Species?

- An alien species is a species introduced outside its normal distribution. According to experts, alien species become 'invasive' when they are introduced deliberately or accidentally outside their natural areas, where they out-compete the native species and upset the ecological balance.
- The most common characteristics of invasive species are rapid reproduction and growth, high dispersal ability, ability to survive on various food types and in a wide range of environmental conditions and the ability to adapt physiologically to new conditions, called phenotypic plasticity.

How Invasive Species are introduced?
The movement of people and goods around the world increases the opportunity for introduction of IAS. The most effective way to stop the negative impacts of IAS is through prevention of spread by regulating the trade or movement of a species. Once an IAS has arrived, early detection, monitoring and eradication can stop the species spreading.

Negative Consequences of Invasive Species

- Invasive species can have a number of negative impacts on the areas that they invade. Perhaps the most significant of these is the widespread loss of habitat.
- Some invaders can physically alter the habitat in addition to destruction.
- Other invasive species may not destroy habitat but can have an impact by killing large numbers of endemic species.
- Invasive species can also impact human health. Invasive zebra mussels accumulate toxins in their tissues like PCB's and PAH's. When other organisms prey on these mussels, the toxins are passed up

the food chain and can also enter animals consumed by humans.23 Ballast water from ships also sometimes contains harmful bacteria like cholera. Invasive animals can also be vectors for disease.

- In addition to these impacts, invasive species can also have enormous economic costs. \

Zoological Survey of India Report on Invasive Species

The Zoological Survey of India (ZSI) has for the first time compiled a list of 157 alien invasive animal species! This list excludes the invasive microbe species. The compilation was announced on the side-lines of National Conference on Status of Invasive Alien Species in India organized by the Zoological Survey of India and Botanical Survey of India.

Highlights:

- Out of the 157 species listed by the ZSI, 58 are found on land and in freshwater habitat, while 99 are found in the marine ecosystem
- The 58 invasive species found on land and in freshwater comprise of 19 fish species, 31 species of anthropods, 3 of molluscs and birds, 1 of reptile and 2 of mammals
- Among alien invasive marine species, genus Ascidia accounts for maximum number of species (31), followed by Arthropods (26), Annelids (16), Cnidarian (11), Bryzoans (6), Molluscs (5), Ctenophora (3), and Entoprocta (1)

Some commonly found alien species:

- African apple snail (Achatina fulica): The most invasive among all alien fauna in India, this mollusc was first reported in the Andaman and Nicobar Islands. It is now found across country and is threatening the habitat of several native species.
- Papaya Mealy Bug (Paracoccus marginatus): Native of Mexico and Central America, it is believed to have destroyed huge crops of papaya in Assam, West Bengal and Tamil Nadu.
- Cotton Mealy Bug (Phenacoccus solenopsis): Native to North America, it has severely affected cotton crops in Deccan
- Amazon sailfin catfish (Pterygoplichthys pardalis): This species is responsible for destroying the fish population in the wetlands of Kolkata.

Other prominent cases in India in recent times:

1. Chilka Lake became degraded mainly through siltation and the choking of the seawater inlet channel, this resulted in the proliferation of invasive freshwater species, a decrease in fish productivity and an overall loss in biodiversity.
2. Invasive growth of the grass Paspalum distichum has changed the ecological character of large areas of the Keoladeo National Park, reducing its suitability for certain waterbird species including the Siberian Crane.
3. In the Kanjli Wetlands the water hyacinth which was introduced is now invasive. From time to time it is removed using mechanical means.
4. At the Ropar wetlands invasive weeds are also a concern and management plans are under development.

Solutions already in Place:

- A Draft National Wetland Strategy has been developed with a clear focus on control of invasive species. Also, several initiatives have been undertaken under the Convention of BioDiversity to control proliferation of invasive species in wetlands and other aquatic bodies.
- Management Action Plans (MAP) have been formulated for 30 out of 66 wetlands identified for conservation and sustainable use. These MAPs have a focus on biodiversity conservation and restoration of ecosystem processes and functions. One of the activities carried out in association with these plans is the control of alien invasive species.
- The threat of invasive pest species gaining entry into India (imported plant/planting material) is addressed under The Plant Quarantine (Regulation of Import into India)Order, 2003, under the ICAR.

However, the risk analysis for invasiveness of a plant species per se is not taken care of under this order.

- The Ministry of Environment and Forests issues approval along with quarantine certificates for the export of wild animals and articles under the Wildlife (Protection) Act 1972.
- The Destructive Insects and Pests Act 1914 aims to prevent introductions into India, and the transport from one province to another, of any fungus or other pest which is, or may be destructive to crops

More Measures

As presently there is no exclusive legislation or policy in India to deal with the invasive alien species. Its necessary that robust steps are to be taken to face this menace. Possible actions include:

- Strengthening domestic quarantine measures to contain the spread of invasive species to neighbouring areas.
- Developing a national database on invasive alien species reported in India.
- Developing appropriate early warning and awareness system in response to new sightings of invasive alien species.
- Providing priority funding to basic research on managing invasive species.

MOVING FORWARD TOGETHER: ENABLING SHARED MOBILITY IN INDIA

India is at an inflection point in the development of its mobility system. As one of the most populous countries in the sworld, India has an opportunity to redefine personal mobility and set an example for other nations. India can develop a shared mobility system that creates benefits for all of its citizens by leveraging domestic strengths in data, connectivity, and entrepreneurship.

What is shared mobility?

Any mode of transportation that is shared by users on a as-needed basis, from bikes to 4-wheelers to mass transit can constitute shared mobility. Shared mobility includes the movement of both people and goods. Shared mobility leads to better fleet utilization—allowing more passengers and goods to travel in the same vehicle/vehicle kilometer travelled.

Types of shared mobility

- **Mass transit:** Mass transit includes high-capacity modes such as buses, metros, and trains that are typically operated by public agencies or the private sector for the public agencies. Mass transit has some of the highest throughput capacities
- **Ridesourcing and ride-splitting:**
    1. Ridesourcing refers to on-demand services that link riders to for-hire drivers who are using their own vehicles as commercial vehicles. These services use online platforms to link drivers with riders and facilitate direct payment. These services operate on dynamic routes (i.e. not fixed routes like most public transit) and fares. Examples include Lyft, Uber, and Ola.
    2. Ride-splitting: Many transportation network companies also offer shared options, such as UberPOOL and Ola Share. The models are called ride-splitting and can be provided by privately-owned buses, cars, and auto rickshaws. Since riders split fares, ride-splitting offers transportation at lower prices than ridesourcing, albeit with some inconvenience due to longer travel times
- **Ridesharing** is similar to ridesourcing, in which trips are shared by travelers, but with the exception that drivers are not considered "for-hire," though they can receive some forms of compensation to recover their cost. Ridesharing can be acquaintance-based, organization-based, or ad-hoc.
- **Bike/cycle sharing, scooter sharing, carsharing**
- **Courier Network Services:** Shared mobility services extend beyond moving passengers in vehicles—courier network services are for-hire freight delivery, in which consumers can hire freight services to move goods either intra-or inter-city. Some examples include Doordash, a company specializing in intra-city food delivery and Roadie, which moves many types of goods either locally or inter-city. Several transportation network companies are also offering courier network services, such as Uber Freight.

Benefits of shared mobility

- **Efficient travel:** With a focus on moving people, not vehicles, cities can promote high-capacity modes and increased asset utilization by reducing vehicle downtime and filling space or seats in vehicles. Reducing the number of vehicles on the road has the potential to reduce congestion, which in turn can save time, fuel and money due to fewer vehicle kilometers travelled.
- **Reduction in transportation cost:** Shared mobility reduces the cost of transportation as users pay for transportation on demand when needed. The opportunity exists to monetize currently underutilized assets through such models as peer-to-peer carsharing.
- **New jobs:** The growing shared mobility ecosystem has the potential to create new jobs as the mobility system shifts from product-centric to service-centric. A shared mobility future will require infrastructure, technological, and operational developments, which will drive employment in these sectors. Reductions in congestion could lead to increased earning potential for drivers. Increased geographic coverage of affordable transportation can support an increase in opportunity for

employment for citizens who previously lacked access of and/or choice of modes of transportation. For example, Koala Kabs is a premium taxi service offered by women drivers for women, children and senior citizens in Delhi NCR.

- **Reduction in fuel consumption and tailpipe emissions:** In a shared mobility paradigm with fewer vehicle kilometers traveled, a significant reduction in fuel consumption relative to business as usual can be achieved, with implications on fuel imports and national energy security. As fossil-based fuel consumption is reduced relative to business as usual in a shared mobility paradigm, tailpipe-based GHG emissions and other harmful pollutants such as sulfur dioxide and nitrogen oxide will also directly decrease.

Opportunities for shared mobility in India

India is uniquely positioned to leapfrog personal vehicle ownership, an is expected to be a leader in shared mobility with shared miles expected to reach 35% of all the miles travelled by 2030 and 50% by 2040. This shift from ownership to usership is supported by a number of factors as discussed below.

- Low per capita vehicle ownership and a high share of public transit : Personal vehicle ownership in India is very low. Around 60% of the mobility demand in India is served by public transportation modes. The high mode share in favour of existing forms of shared transport can support the transition to shared mobility solutions.
- Supportive framework for shared mobility: India is starting to put in place supportive policies for shared mobility and digitization, and several states have developed policies to regulate the shared mobility ecosystem. In December 2016, the Ministry of Road Transport and Highways published taxi policy guidelines. Other key government policies such as the National Urban Transport Policy (2014) promote the concept of shared mobility given its vision to move people and not vehicles. The Motor Vehicles Amendment Bill 2017 also focuses on better utilization of transportation assets, increasing the accessibility and mobility of people, improving urban transport, and reducing traffic congestion at the state level.
- Young population and growing entrepreneurial culture: A young population may be more inclined to adopt new and innovative ideas55. India's emerging entrepreneurial culture further supports the development of innovative shared mobility solutions.
- Growing smartphone penetration and internet connectivity: High penetration of smartphones and better internet connectivity boosts the adoption of shared mobility solutions and services.

Current challenges for shared mobility in India

- Infrastructure and services: Several Indian cities lack adequate mass transit infrastructure and services, which limits adoption of these modes. Additionally, cities lack infrastructure for non-motorized transport, which may limit adoption of bike/cycle sharing schemes.
- Policy and regulatory: Policy making in the field of shared mobility is still at the nascent stage. Proper care should be given to include all the amendments which might be needed in the future.
- Behavioral: Owning a private vehicle is aspirational and a symbol of status. Lack of awareness about the societal and environmental costs of private vehicle use could be a barrier to adoption of shared forms of mobility.
- Data: Inconsistencies exist in data standards and guidelines for best practices between public and private transportation providers, which can be a barrier for promoting shared mobility. Also, there are limitations with regard to collection and processing of mobility data.

Suggestions to help achieve a sustainable and equitable shared mobility future

- Promote mass transit: As public transit operates on fixed routes and schedules, improving first- and last-mile connectivity will be paramount in maintaining, or improving India's existing mode share of public transit. Improving public transit efficiency and convenience with route rationalization and better vehicles will also support public transit.

- Promote high share of non-motorized transport modes: Non-motorized transport modes, such as walking and cycling, not only promote health, but are also affordable, clean, and efficient. Cities should support these active modes by developing safe, non-motorized transport environments, promoting cycle sharing schemes and improving their connectivity to motorized forms of shared mobility.
- Build the infrastructure needed to support emerging shared mobility solutions.
- Promote high occupancy vehicles: For promoting high occupancy vehicles, contract carriage permit systems may need to be reviewed in order to allow more flexibility to state governments to support different types of shared mobility models. Some of the recent examples like Tamil Nadu Motor Vehicle Rules recognizing the usage of autorickshaws with contract carriage permits for shared mobility are regulatory initiatives that could encourage shared mobility models.
- Facilitate the integration of different modes: Shared modes of transportation should complement each other to provide a comprehensive system where users can take multiple modes in an efficient manner, meeting their transportation expectations and needs. This can be enabled by data sharing.
- Enhance data availability and sharing: Data can be a key enabler in a shift to shared mobility and multimodal integration. A clear policy for collecting, standardizing, aggregating, and sharing transit data can increase the interoperability of data.
- Promote micro-entrepreneurship: Measures should be considered to promote individual entrepreneurs to enter the shared mobility market.
- Ensure wider geographic coverage to ensure that they are accessible and provide the much-needed first- and last-mile solutions. In areas which are underserved, this could be done by introducing fiscal and non-fiscal measures that enhance demand and supply creation.
- Develop a mobility digital infrastructure: Similar to other ‘public digital infrastructure’, the government could consider developing a ‘common mobility digital infrastructure’ that might help solve some of the key challenges associated with data sharing. This infrastructure could provide a platform to connect various forms of mobility to provide seamless multimodal transport across services. It could enable innovation and allow development of new mobility service offerings.
- Consider fiscal and non-fiscal measures to support the adoption of shared mobility: Incentives may help shift users from private vehicle use. To encourage the use of shared modes, cities should test incentives that support adoption of shared services and promote higher occupancy of vehicles.
- Initiatives to promote shared mobility must consider the safety of drivers, riders, and pedestrians. Regulations should be developed to ensure the safety of drivers and passengers as well as the quality vehicles.
- Measure state performance in transport reforms: To further the uptake of shared mobility, KPIs could be developed to measure the impact of actions taken by states and districts to promote innovative mobility solutions.

Conclusion

- An efficient and comprehensive transportation system is essential to supporting a well-functioning and prosperous community. Transitioning to a shared mobility future will allow India to build a transportation system that is more efficient, cleaner, and meets the needs of its growing population.
- In order to achieve this goal, the private and public sector must work together to develop policies and business models that support shared mobility. The guidelines presented in section 5 may serve as a framework for initiating next steps to achieve this goal.
- The government can take the lead in catalyzing a shared mobility future through supportive policies. Doing so will enable accessible, equitable, efficient, and safe transportation options. These policies should be developed with future demand growth in mind, and appropriate milestone goals should be set to ensure that progress is being made.
- In working towards the goal of shared mobility, India will set itself up for clean, liveable cities and set an example for other nations of how to sustainably meet the transportation needs of a growing global population