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NOTE: Please remember that following '*answers*' are *NOT* '*model answers*'. They are *NOT* synopsis too if we go by definition of the term. What we are providing is content that both meets demand of the question and at the same time gives you extra points in the form of background information.



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General Studies Paper - III

Topic: Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment. Inclusive growth and issues arising from it.

Q) Although India's jump in ease of doing business should be welcomed, the index itself is not immune to criticism. Analyze. (250 words)

The hindu

Why this question

India climbed another 23 points in the World Bank's ease of doing business ranking to 77th place, becoming the top ranked country in South Asia for the first time and third among the BRICS. In this context it is essential to know about the criticism faced by the bank.

Directive word

Analyze-here we have to examine methodically the structure or nature of the topic by separating it into component parts, and present them as a whole in a summary.

Key demand of the question.

The question wants us to analyze India's current position in EDB index, laud India's performance and also discuss the criticism faced by the index.

Structure of the answer

Introduction– write a few introductory lines about the recent improvement in EDB.

Body-

- *Briefly discuss why this improvement should be welcomed. E.g it will attract more investment; help the depreciating rupee; help towards structural reforms; boost entrepreneurship etc*
- *Discuss the criticism faced by the E.g A common criticism of the ranking is that it limits its sample size to just a few major cities, thus projecting an imperfect picture of overall business conditions. Others have wondered if governments may be gaming the rankings by tailoring their policies to specifically fit the World Bank's criteria instead of trying to enact wider structural reforms. Another criticism is whether the bank is right to measure a country's business environment based on written legal rules rather than investigating the actual ground conditions in which businesses operate. Many businesses, for example, may be able to bribe their way out of bad rules etc.*

Conclusion- based on your discussion, form a fair and a balanced conclusion on the given issue.

Background:-

- Recently World Bank announced that it would revise the methodology it uses to calculate the ease of doing business index, a move that is expected to affect the rankings of countries in the last four years.

Ease of doing business index:-

- Ease of doing business is an index published by the World Bank. It is an aggregate figure that includes different parameters which define the ease of doing business in a country.
- Nation's ranking on the index is based on the average of 10 sub-indices. These relate to the time taken to start a business; getting building sanctions, but not buying the land; getting a power connection; registering the purchase of property; getting credit sanctioned; protection of investors; taxation; foreign trade; enforcement of contracts; filing for insolvency or forcing bankruptcy.
- India is ranked 77th among 190 countries by leapfrogging 23 ranks in World Bank's Ease of Doing Business (EODB) 2018 rankings. This improvement should be welcomed as it will attract more investment, help the depreciating rupee, help towards structural reforms, boost entrepreneurship etc
- Ease of doing business index has become a popular tool tracked by governments trying to show the world that they offer a favourable investment climate for private businessmen.



Why is the index of ease of doing business criticised:-

- **Political influence:-**
 - Recently world Bank's chief economist raised concerns that the rankings could have been influenced by politics.
- **Methodology issues:-**
 - It limits its sample size to just a few major cities, thus projecting an imperfect picture of overall business conditions.
 - In the real India, it still takes 156 days to get a building plan sanctioned, and 1,445 days in court to get a judicial verdict on a civil dispute.
 - Does not directly measure more general conditions such as a nation's proximity to large markets, quality of infrastructure, inflation, or crime.
 - Methodological weaknesses, an uncertainty in the ability of the indicators to capture the underlying business climate, and a general worry that many countries may find it easier to change their ranking in Doing Business than to change the underlying business environment.
- Experts wondered **if governments may be gaming the rankings by tailoring their policies to specifically fit the World Bank's criteria** instead of trying to enact wider structural reforms.
- **Questions were raised whether the bank is right to measure a country's business environment based on written legal rules** rather than investigating the actual ground conditions in which businesses operate.
- **Businesses:-**
 - Many businesses, for example, may be able to bribe their way out of bad rules. There was significant variation between World Bank's surveys and actual business conditions.
 - Ease of running a business is just as difficult as before with archaic labour laws, increasingly militant trade unions, undisciplined and low productivity labour, besides the regular rent collecting proclivities of government agencies. There is little sign that this is improving.

Q) Discuss how section 7 of RBI act empowers the central government to intervene in the functioning of the RBI. What are the recent issues surrounding the act. Discuss. (250 words)

Livemint

Why this question

The central government has recently invoked the said act for the first time in the history of 83 years. Although the act has only been invoked upto the consultation stage, it is important to understand the provisions of the act and the controversy surrounding it.

Directive word

Discuss- this is an all-encompassing directive which mandates us to write in detail about the key demand of the question. we also have to discuss about the related and important aspects of the question in order to bring out a complete picture of the issue in hand.

Key demand of the question.

the question wants us to write in detail about the section 7 of RBI act, how it empowers the central government to intervene in RBI's functioning. It then wants us to write in detail about the controversy surrounding the said act.

Structure of the answer

Introduction– *write a few introductory lines about the recent invocation of sec 7 of RBI act by the government.*

Body-

- *Discuss the provisions of the sec 7 of the RBI act. E.g Section 7 pertains to management. "The Central Government may from time to time give such directions to the Bank as it may, after consultation with the Governor of the Bank, consider necessary in the public interest," says Section 7(1) of the RBI Act, 1934; Further, Section 7 (2) gives the government powers to entrust the running of the RBI to its Central Board of Directors.; Subject to any such directions, the general superintendence and direction of the affairs and business of the Bank*



shall be entrusted to a Central Board of Directors which may exercise all powers and do all acts and things which may be exercised or done by the Bank,”

- *Discuss the recent controversy surrounding the act. Briefly discuss the differences between the govt. and the RBI over which such act may be invoked.*

Conclusion– based on your discussion, form a fair and a balanced conclusion on the given issue.

Background:-

- Reserve Bank of India has worked as efficiently as any top central bank of the world right from its inception. It was blessed with absolute independence to control or manage monetary liquidity, price stability, exchange rate stability, and later on financial stability also.
- Section 7 (1) of The Reserve Bank of India Act, 1934, became a contentious issue after **the tension between the central bank and government** turned into a **public spat** over the last few days.

Section 7 of RBI act and how it empowers centre to intervene in the functioning of RBI:-

- The RBI is an entity independent of the government as it takes its own decisions. However, in certain instances, it has to listen to the government. This provision in the RBI Act is contained in its Section 7 which says:-
 - **The Central Government may from time to time give such directions to the Bank** as it may, after consultation with the Governor of the Bank, consider necessary **in the public interest.**
 - Subject to any such directions, the general superintendence and direction of the affairs and business of the Bank shall be **entrusted to a Central Board of Directors** which may exercise all powers and do all acts and things which may be exercised or done by the Bank
 - Save as otherwise provided in regulations made by the Central Board, the Governor and in his absence the Deputy Governor nominated by him in this behalf, shall also have powers of general superintendence and direction of the affairs and the business of the Bank, and may exercise all powers and do all acts and things which may be exercised or done by the Bank.
- Clearly, the section empowers the government to issue directions in public interest to the central bank, which otherwise does not take orders from the government.

Recent issues surrounding the act:-

- The issue of invoking Section 7 (1) of RBI Act came up during **the hearing of Allahabad high court** in a case filed by the Independent Power Producers Association of India challenging **RBI's 12 February circular**. The high court said the government could issue directions to RBI under Section 7 of RBI Act.
- Against this backdrop, the government issued a letter to the RBI governor seeking his views on exemption for power companies in relation to the 12 February circular. The second instance was when the government sought the governor's views on **using RBI's capital reserves for providing liquidity.**
- Exercising powers under this section, the government has sent several letters to the RBI governor in recent weeks on issues **ranging from liquidity for non-banking financial companies (NBFCs), capital requirement for weak banks and lending to micro, small and medium enterprises (MSMEs)**, withdrawal of **Prompt Corrective Action for public sector banks**
- Government believed that easing of lending rules for the banks under the prompt corrective action (PCA) framework could help reduce pressure on MSMEs. However, the RBI argued that such a move would put the clock back and undo clean-up efforts.
- With the credit markets tightening after the IL&FS default in September, non-banking finance companies lobbied the government for more liquidity. But RBI maintained its position since the **banking** system did not witness any spike in borrowing costs and the market was just repricing risk in an evolving situation
- Reportedly, the government and the RBI disagree on a large number of important issues such as classification of non-performing assets (NPAs) and setting up of a payments regulator independent of the RBI.
- **This section has never been used in till now:-**
 - It was not used even when the country was close to default in the dark days of 1991, nor in the aftermath of the 2008 global financial crisis.
 - It is not clear how this Section operates since it has never been used.

Way forward:-

- **International examples:-**
 - There has to be a forum within the democratic structure where the RBI is obligated to explain and defend its position.
 - Different countries have taken different routes and by and large each model is appropriately tuned to their specific contexts.



- US example is a good model to work upon. Presentation by the chairman of the Federal Reserve to the Congress makes for public exposure and transparency but does not take away the chairman's autonomy.
- **The governor should be responsible and accountable to Parliament and not to a particular government or the ministry of finance, or minister.** He can testify to Parliament twice a year. In separate testimony in both houses of Parliament, the lawmakers can ask questions of the RBI Governor and the latter can respond.
- A better way to sort out these differences and to come to a conclusion is to have a larger debate with technical experts weighing in.
- On issues of operational autonomy, the central government needs to lay off its pressure on the RBI.
- On macro issues such as exchange rate management and RBI's dividend policy, written agreements that clearly demarcate roles and responsibilities can be thrashed out.
- The Monetary Policy Framework Agreement and the FRBM Act are good illustrations of how a mutually agreed rule-based framework can broker peace between the central bank and the executive arm of government.
- If the issues are not resolved, the tussle will undermine investor confidence and strengthens fears about institutional erosion when India is already experiencing economic turmoil.

Q) It is said that well- anchored inflation expectations can improve the strength of the domestic economy. Discuss in light of India's flexible inflation targeting framework?(250 words)

Livemint

Why this question

The article highlights the importance of selecting an apt anchor for inflation targeting which would enable the central bank and the government to have greater flexibility in dealing with growth inflation conundrum. The issue gains particular significance in the current situation where it appears that RBI and government are not seeing eye to eye on certain issues.

Key demand of the question

The question expects us to bring out what is meant by anchoring of inflation targeting, how it manifests in India's monetary policy framework, the advantages that it has for the macroeconomy, the flexibility that it provides for resolving the growth inflation dilemma and challenges therein.

Directive word

Discuss – This is an all-encompassing directive – you have to debate on paper by going through the details of the issues concerned by examining each one of them. You have to give reasons for both for and against arguments.

Structure of the answer

Introduction – *Explain about inflation targeting and India's monetary policy framework which is based on flexible inflation targeting.*

Body

Explain what is meant by well anchored inflation expectations. Explain with the help of India's own policy

Discuss the advantages of having such anchors and then decide on the monetary policy. Discuss advantages and disadvantages such as

- *The inflation targeting framework put into place is expected to establish the credibility of the central bank by reducing the uncertainty about future policy actions through increased communication, transparency and predictability in the policy actions*
- *improve the strength of the domestic economy to counter adverse external shocks, reduce inflation persistence and curtail the pass-through of exchange rate depreciation to domestic prices*

Discuss the situation in India and whether our inflation expectations, anchors and targets have left scope for flexibility

Conclusion – *Discuss if any changes are required in the current framework.*



Background :-

- Inflation targeting (IT) is a monetary policy strategy used by central banks for maintaining prices at a certain level or within a specific range. Using methods such as interest rate changes, this could help guide inflation to a targeted level or range. This policy is designed to assure price stability.
- Recently Finance ministry and Reserve Bank of India agreed to adopt flexible IT based on the recommendations of a panel headed by Urjit Patel. (To bring the inflation rate below 6% by January 2016 and to 4% by the financial year ending March 2017, with a band of +/- 2% points).
- Price stability is the main goal of this monetary policy.

Well anchored inflation :-

- Effective implementation of monetary policy under inflation targeting depends upon how well anchored the inflation expectations are.
- When actual inflation drifts away from the target in the short run, the crucial task before the policy is to anchor medium to long term inflation expectations around the target.
- Anchoring of inflation expectations depends upon a number of factors such as the credibility and independence of the central bank, clarity and transparency in the communication of policy decisions to general public etc.
- Furthermore, the anchoring of inflation expectations occurs only gradually as it takes some time for the central bank to gain credibility.
- The inflation targeting framework put into place is expected to establish the credibility of the central bank by reducing the uncertainty about future policy actions through increased communication, transparency and predictability in the policy actions.

These expectations can improve the strength of the economy :-

- World Economic Outlook, the International Monetary Fund (IMF) provides very interesting insights about the improved inflation performance of emerging markets since mid-2000.
- Domestic factors, mainly long-term inflation expectations, are the major drivers of inflation in emerging markets. **The inflation expectations in emerging markets have become increasingly anchored over the past two decades.**
- The behaviour of inflation expectations have important implications for the actual inflation outcomes and the monetary policy. **Also, the extent of forward versus backward looking elements in the expectations formation actually determines the magnitude of the output loss under disinflation process.**
- Moreover, well- anchored inflation expectations **can improve the strength of the domestic economy to counter adverse external shocks, reduce inflation persistence and curtail the pass-through of exchange rate depreciation to domestic prices.**
- **Ideally, a firmly anchored medium to long term inflation expectation would not respond to temporary shocks to actual inflation and would become more stable around the target.**
- If inflation expectations over the medium to long term horizons are firmly anchored around the target, **this provides some space for monetary policy to address growth concerns, even when the actual inflation spikes temporarily due to shocks. Firmly anchored inflation expectations prevent the second round effects of a relative prices changes.**

Positives of inflation targeting :-

- **Balancing Predictability and Expectations**
 - Inflation targeting instills predictability. If one was to take a broader view of the world, then situations will appear to be relatively predictable.
- **Preventing Bubbles and Fuelling Sustainable Growth**
- **Preventing Economic Collapse**
 - Without inflation targeting, costs can skyrocket.
- It allows monetary policy to focus on domestic considerations and to respond to shocks to the domestic economy.
- It facilitates well-informed decision-making by households and investors, reduces economic and financial uncertainty, and increases the effectiveness of monetary policy.
- An explicit numerical inflation target increases a central bank's accountability and it can also insulate the bank from political pressure to undertake an overly expansionary monetary policy.
- In emerging markets Inflation targeting appears to have been associated with lower inflation, lower inflation expectations and lower inflation volatility relative to countries that have not adopted it.

Negatives:-

- **Created an imbalance between India's foreign exchange debt** and its reserves that has brought international hedge funds into the Indian money market.



- Making price stability the first goal of policy, therefore, sacrifices growth at the altar of stability. That is what the RBI has been doing since January 2007.
- **Unrealistic :-**
 - Economy will react and be influenced by thousands of factors and it is not possible to always counter so many influencing elements. Hence, in an attempt to target a certain inflation rate or to keep it within a certain limit, central banks and governments take measures that prove to be wrong. Many a time in the past and in developed nations, governments and the central banks have not only failed to contain inflation but their attempts have led to more problems.
- **Against development:-**
 - It is not entirely possible to keep the inflation in check at all times. Even today, there are places in every country where inflation targeting simply doesn't work.
- **Side Effects:-**
 - Inflation targeting can be hazardous for a country in the long term. It can render various industries to become uncompetitive. The governments may take up too much of the onus or the financial burden of keeping inflation under check. This can lead to higher fiscal deficits, poor welfare policies or stimulus packages and eventually the economy may cease to remain as free flowing as is needed.
- **Increases in inflation are not necessarily coupled to any factor** internal to a country's economy and strictly adjusting interest rates will potentially be ineffectual and may restricts economic growth.
- It **neglects output shocks** by focusing solely on the price level and it may leads to potential instability in the event of large supply-side shocks.
- **It may leads to restricted ability of the central bank** to respond to financial crises or unforeseen events.
- Due to interest Rate high, borrowing cost became high inside country.
- Capital intensive industries like infrastructure , power can not sustain high interest rate to check inflation .
- Policy of inflation targeting by RBI made borrowing in the Indian market very costly for industrial borrowers, thus increasing their exposure to currency volatility.

Q) For MSME sector, access to credit is one of the most significant challenge amongst the several challenges that the sector faces. Analyze issues related to credit availability for MSME sector and the role government is playing ? (250 words)

Financial express

Why this question

This article discusses the issues plaguing MSME sector with an in depth analysis of issues related to credit availability for MSMEs. In the backdrop of IL&FS crisis questions have been raised over the credit worthiness of MSMEs as well as the availability of credit for them. This question would help you prepare this topic in detail.

Key demand of the answer

The question expects us to list the various issues plaguing MSME sector and explain in greater depth the situation with respect to credit availability for MSMEs , the issues plaguing credit availability for the , and analyze the decision of the government to improve their situation. We need to provide a holistic view of the situation and discuss what needs to be done in conclusion.

Directive word

Analyze – When asked to analyze, you have to examine methodically the structure or nature of the topic by separating it into component parts and present them as a whole in a summary.

Structure of the answer

Introduction – Highlight the importance of MSME sector for the economy.

Body

- *List the various issues plaguing MSME sector such as poor infrastructure etc. Explain the problem of credit availability for the sector.*



- *Discuss why such issues are being faced – the fact that banks are ill equipped, general problems with the economy, the problem with NBFC sector which are the major lenders to this sector etc*
- *Discuss the steps taken by the government to address the situation and analyze how effective they are going to be*

Conclusion – highlight that MSME sector need attention because of their immense significance for the economy and discuss way forward.

Background :-

- Micro, Small & Medium enterprises termed as “engine of growth “ for India is the pillar of economic growth in many developed, and developing countries in the world.
- MSME has played a prominent role in the development of the country in terms of creating employment opportunities-MSME has employed more than **50 million people**, scaling manufacturing capabilities, curtailing regional disparities, balancing the distribution of wealth, and contributing to the **GDP-MSME sector forms 8% of GDP.**

However lending to them poses challenges like :-

- Recently according to a joint study by credit bureau **CIBIL** and **MSME** lender **SIDBI**, **risky loans** worth Rs 1.2 lakh crore to medium and small enterprises (MSMEs) in the system could potentially create Rs 16,000 crore worth NPAs by March 2019.
- Reason for MSME lending from banks remaining flat, or even contracting a bit, is that **banks are not best equipped to lend to this sector.**
 - The amount of management time required to service an MSME loan is the same as for a larger loan, so banks prefer to focus on larger clients
 - The typical need of a SME is around INR 10-20 lacs, as against a larger corporation which runs into hundreds of crores. **The cost of servicing such a small-sized loan from a bank or an NBFC is very high and therefore, financial institutions are likely to avoid such requests.**
- **Collateral:**
 - Additionally, to avail loans, one needs to offer collateral – a personal property or manufacturing plant or even machinery. Most the SMEs do have much to offer as collateral; hence lending firms view them as high-risk requests.
- Due to demonetization drive, MSMEs were among the worst hit sector as their businesses were cash based. **The response was not just limited to demonetization but also during the GST.**
- MSMEs are exposed to market-linked volatility thus the **credit risk is high.**
- **Recently in his note to Parliament’s Estimates Committee on bank non-performing assets (NPAs), Former RBI governor has flagged three major sources of potential trouble for MSME :**
 - Mudra credit, which is basically small-ticket loans granted to micro and small enterprises. The disbursement under Mudra loans alone is Rs. 6.37 lakh crore, which is over 7% of the total outstanding bank credit. These loans have been sanctioned under the Pradhan Mantri Mudra Yojana.
 - Lending to farmers through Kisan Credit Cards
 - Contingent liabilities under the Credit Guarantee Scheme for MSMEs, run by the Small Industries Development Bank of India.
- **Other challenges like Impact on MSME due to GST:-**
 - **Costs :-**
 - India’s paradigm shift to the Goods and Services Tax (GST) regime will increase their compliance costs and snare a majority of them into the indirect tax net for the first time.
 - GST will have a marginally negative impact because of **higher tax rates**
 - **Input Tax Credit :-**
 - Along with the initial confusion and infrastructure glitches that took some time to stabilize, there were reports of delays in receiving Input Tax Credit (ITC), which directly affected the MSME industry.
 - In addition, with most MSMEs not being listed entities, **their monthly or quarterly business performance filings are also largely unavailable.**
 - The transition to the GST regime affected the MSME sector more than any other, since its players **lack compliance infrastructure** to map their outstanding inventory with tax invoices. Furthermore, its weak credit profile and risk weightages attached to it by banks, pushed it closer to higher credit change options from the non-banking finance segment.



Measures already taken:-

- Strong credit demand in this segment, among other things driven by formalization of credit demand is likely to keep the overall NPA rate in this segment in check.
- In addition, **RBI relief to MSME borrowers** with aggregate exposure up to Rs 25 crores, giving 90 day extension for repayments, is likely to lead to a reversal of about Rs 15,000 crores Gross NPA in this segment.
- **Mudra scheme :-**
 - Loans offers to small businesses in the unorganized sector are now covered by a credit guarantee **scheme**. It also helps bridge the shortfall in loans for these businesses. This helps small entrepreneurs save on the interests that they need to pay.

Way forward :-

- **Financial Reporting:**
 - The SMEs also need to back their loan request with tax-returns, balance sheets and other financial documents which speak about the health of the companies.
- **Priority lending to honest taxpayers**
 - The government need to incentivise MSMEs who pay promptly and within timelines. Adding to this, banks and associated financial organisations can introduce priority lending for honest taxpayers based on returns filing. **This would improve the working capital for these businesses and have a positive impact.**
- **Reducing time limit for reversal of ITC**
 - ITC ought to be inverted under the CGST, in case the receiver is unable to pay to the supplier within a time period of 180 days. Ideally, for MSMEs, this time limit should be lowered to 90 days. As, being a part of the working capital and a lifeline for their business, any postponement in the payments is sure to impact business operations at all times.
- **Increasing definition of class of persons**
 - The class of person definition has been raised from Rs 3 crore to Rs 5 crore. An additional increase of Rs 10 crore is recommended because it will then cover MSME service and industrial units, thus, amounting to benefits at large.
- **Adding services to composition scheme**
 - About 48 percent of the GDP is contributed by the service sector and there are several SMEs operating service businesses. Thus, it's vital that services are counted in the composition scheme minus any cap.
- **Adding POS solutions to 'Digital MSME' scheme**
 - As per the recent changes, taxpayers with turnover of up to Rs 5 crore can file GSTR – 1 on a quarterly basis. The best way to tackle this is to use Point of Sale (POS) solutions that provide end-to-end assistance from generating digital invoices to payments to capturing data.
 - MSMEs with a turnover of Rs 2 to Rs 3 crore can easily use POS, along with the associated digital compliance and filing software, to maintain their data and file on time.
- And the government can further expedite this process by subsidizing POS sales. Under the 'Digital MSME' scheme that promotes cloud computing, POS solutions can also be introduced as one of the products.

Conclusion:-

- As MSMEs become accustomed to a larger compliance climate, a better level of preparedness and discipline in conducting business will gradually be a part of operation. With the government's commitment to strengthen MSMEs on all fronts, the current challenges will stabilize and gradually take a positive turn to fulfill the nation's 'Make in India', 'Skill India' as well as 'Startup India' visions.

Q) Discuss the factors influencing global oil prices in brief with emphasis on role leaders play in shaping oil prices? How should India respond to these price vagaries in oil ? (250 words)

[Indianexpress](https://www.indianexpress.com)

Why this question

The article discusses the various factors at play in determining oil prices with a special emphasis on personality factor in determining prices. In light of the uncertainty regarding oil prices which affects India in myriad ways, we need to prepare this question.

Key demand of the question

The question expects us to bring out the various factors which have a role in determining oil prices with an emphasis on the role played by personality factor in determining oil prices. Thereafter, we



need to discuss a series of steps in short term and long term through which India can secure itself against such variance in oil prices.

Directive word

Discuss – Your discussion should bring out the different factors which have a role to play in determining oil prices with an emphasis on the role played by personality factor.

Structure of the answer

Introduction – *explain the current situation where rising oil prices have given a macroeconomic shock to India. Highlight that this is a regular occurrence.*

Body

Discuss the factors affecting oil prices – drivers of demand, supply and inventories have often been scrambled by the intangibles of Wall Street speculators and geopolitics.

Discuss in detail the impact of personality of leaders in determining oil prices. Give instances where personality factor played a major role in oil prices determination

Explain how should India respond to such a situation in short term and long term. Examine using taxes as a recourse in short term to alleviate the issues faced as a result of oil prices. In the long term explore the rise of renewables, strategic oil reserves etc as ideas which can help India deal with such variations.

Conclusion – *Discuss the way forward for India.*

Background :-

- Oil constitutes one-third of the country's total imports and is considered to have wide-ranging impact on its economy.
- Oil is a commodity, and as such, it tends to see larger fluctuations in price than more stable investments such as stocks and bonds. There are several influences on oil prices, a few of which we will outline below.

Oil prices change due to economics of supply and demand :-

- Laws of supply and demand cause oil prices to change. When supply exceeds demand, prices fall and the inverse is also true when demand outpaces supply.
- The 2014 fall in oil prices can be attributed a lower demand for oil in Europe and China, coupled with a steady supply of oil from OPEC. The excess supply of oil caused oil prices to fall sharply.

Oil prices change due to subjective wishes of oil producing countries :-

- In 1973 OPEC ratcheted up prices four fold in anger at the Western World's support for Israel in the Yom Kippur Arab-Israel conflict.
- **Recently US pulled itself out of the JCPOA** . Simultaneously, US issued notices that all countries and companies must stop doing business with Iran within six months and that if they did not comply, US would sanction them under the US law, **CAATSA** (Countering American Adversaries through Sanctions Act).
 - So oil importing countries are likely to move away from buying oil from Iran. This is likely to drive up global oil prices further.
- **The levers of oil policy in most petro states are in the hands of autocratic leaders**
- Personalisation would not have been an issue in the past when oil was traded mostly against long-term supply contracts. **Today, however, in an integrated, liquid and fungible market characterised by flexible, short-term deals, it is of relevance. The local actions of individual leaders have global ramifications on prices.**
- **Venezuela**
 - The political and economic crises affecting the oil-rich South American country have resulted in its crude production going into freefall.
 - The collapse has tightened oil markets much more quickly than anticipated, experts said. Output is down so much that Venezuela has cut production even more than Saudi Arabia, Opec's biggest producer.

Other reasons that affect oil prices :-

- **Political instability in the Middle East** causes oil prices to fluctuate, as the region accounts for the lion's share of the worldwide oil supply.
- **Production costs, political turmoil and even interest rates** can play a significant role in the price of oil.
- **Natural disasters** are another factor that can cause oil prices to fluctuate. For example, when Hurricane Katrina struck the southern U.S. in 2005, affecting 19% of the U.S. oil supply.



Measures India needs to take:-

- Demand management, accelerated development of electric vehicles and increased investment in clean energy R&D are necessary. Such measures would most effectively counter the impact of personalised and emotional oil policy
- Expedite the process of exploring domestic avenues and diversify its sources of oil supply.
- There is an urgent need for development of non-conventional (including renewable) sources as a substitute for conventional sources to meet the energy needs.
- Energy subsidy reforms along with regulations, standards, and targets directing the efficient level of utilization of oil as a fuel are important to reduce dependence on oil imports.
- Public Transport should be made available and user friendly so that Individual vehicles reduce and demand for oil decreases.
- India could reinstate its formula for subsidizing the fuels by asking upstream companies to share a part of the burden. Currently, prices of gasoline and diesel are fixed through a complex formula, which is not fully understood. It is based on what the government terms “trade parity price,” or the estimated price of the fuel if it were to be imported and exported in the ratio of 80:20.
- For now, the government is said to have asked the state-owned oil marketing companies to absorb some of the pain and not pass higher costs on to consumers.
- What India needs now is a carefully **devised strategy that is not driven by short-termism, but aims to gradually insulate the country from global oil price volatility.**
 - Such a strategy should be **centered on three things:**
 - Expediting the migration to electric mobility:
 - **Multi-stage adoption:** This calls for first identifying a **specific set of routes** for electric bus services in a particular big city and ensuring that **all infrastructure needed** for their seamless operation is in place before considering other sets of routes.
 - Expanding the biofuel blending in petrol, and
 - Stimulating exports.

Q) Critically analyze the steps taken by the government to improve the credit situation of MSMEs ? (250 words)

[Livemint](#)

Why this question

This article highlights the steps taken by the government to boost credit availability of MSMEs and analysis of these steps. In the background of IL&FS crisis, RBI vs Govt narrative etc , the issue of credit availability for MSMEs has become a vital one and needs detailed preparation.

Key demand of the question

The question expects us to list out the steps taken by the government to boost credit availability of MSMEs and analyze the desirability of such steps in the context of overall problems of MSME and other debates surrounding MSMEs.

Directive word

Critically analyze – When asked to analyze, you have to examine methodically the structure or nature of the topic by separating it into component parts and present them as a whole in a summary. When ‘critically’ is suffixed or prefixed to a directive, all you need to do is look at the good and bad of something and give a fair judgement.

Structure of the answer

Introduction – Discuss the contribution of MSME sector to the economy.

Body

Discuss the steps taken by the government to boost credit availability of MSMEs.

Discuss the reasons why such steps were taken by the government – share of non-banking financial companies (NBFCs) in loans given to MSMEs has gone up in recent year, issue with NBFC sector, impact of demonetization on MSMEs etc



Discuss why such steps taken by the government would not act as panacea for the MSME sector – more than 90% of MSMEs operate in the informal sector. These firms largely depend on informal sources of credit at higher interest rates. It is difficult for these firms to get loans from banks because they do not maintain proper documents and records, not in a position to adopt technology to improve productivity. Further, most firms in the informal sector are unlikely to attract skilled labour.

Discuss the steps that are needed to improve the situation for MSMEs

Conclusion – Give a fair and balanced view and discuss way forward.

Background :-

- Micro, Small & Medium enterprises termed as “engine of growth “ for India is the pillar of economic growth in many developed, and developing countries in the world.
- MSME has played a prominent role in the development of the country in terms of creating employment opportunities. The share of MSMEs in the country’s gross value added is estimated to be about 32%. It also contributes about 40% to total exports and 45% to manufacturing output

Measures already taken:-

- Apart from improving ease of doing business, the most important announcements were regarding access and cost of credit.
- MSMEs can now get in-principle approval for loans of up to Rs.1 crore in 59 minutes. Additionally, goods and services tax (GST)-registered MSMEs will get an interest subvention on fresh or incremental loans. Interest rate rebates have also been announced for exporters.
- In addition, **RBI** relief to MSME borrowers with aggregate exposure up to Rs 25 crores, giving 90 day extension for repayments, is likely to lead to a reversal of about Rs 15,000 crores Gross NPA in this segment.
- **Mudra scheme :-**
 - Loans offers to small businesses in the unorganized sector are now covered by a credit guarantee **scheme**. It also helps bridge the shortfall in loans for these businesses. This helps small entrepreneurs save on the interests that they need to pay.

However lending to them is a challenge due to the following reasons :-

- Recently according to a joint study by credit bureau **Cibil** and **MSME** lender **Sidbi**, **risky loans** worth Rs 1.2 lakh crore to medium and small enterprises (MSMEs) in the system could potentially create Rs 16,000 crore worth NPAs by March 2019.
- Reason for MSME lending from banks remaining flat, or even contracting a bit, is that **banks are not best equipped to lend to this sector**.
 - The amount of management time required to service an MSME loan is the same as for a larger loan, so banks prefer to focus on larger clients
 - The typical need of a SME is around INR 10-20 lacs, as against a larger corporation which runs into hundreds of crores. **The cost of servicing such a small-sized loan from a bank or an NBFC is very high and therefore, financial institutions are likely to avoid such requests.**
- **Collateral:**
 - Additionally, to avail loans, one needs to offer collateral – a personal property or manufacturing plant or even machinery. Most the SMEs do have much to offer as collateral; hence lending firms view them as high-risk requests.
- More than 90% of MSMEs operate in the informal sector. These firms largely depend on informal sources of credit at higher interest rates.
- Due to demonetization drive, MSMEs were among the worst hit sector as their businesses were cash based. **The response was not just limited to demonetization but also during the GST.**
- MSMEs are exposed to market-linked volatility thus the **credit risk is high**.
- **Recently in his note to Parliament’s Estimates Committee on bank non-performing assets (NPAs), Former RBI governor has flagged three major sources of potential trouble for MSME :**
 - Mudra credit, which is basically small-ticket loans granted to micro and small enterprises. The disbursement under Mudra loans alone is Rs. 6.37 lakh crore, which is over 7% of the total outstanding bank credit. These loans have been sanctioned under the Pradhan Mantri Mudra Yojana.
 - Lending to farmers through Kisan Credit Cards
 - Contingent liabilities under the Credit Guarantee Scheme for MSMEs, run by the Small Industries Development Bank of India.



- **Other challenges like Impact on MSME due to GST:-**
 - **Costs :-**
 - India's paradigm shift to the Goods and Services Tax (GST) regime will increase their compliance costs and snare a majority of them into the indirect tax net for the first time.
 - GST will have a marginally negative impact because of **higher tax rates**
 - **Input Tax Credit :-**
 - Along with the initial confusion and infrastructure glitches that took some time to stabilize, there were reports of delays in receiving Input Tax Credit (ITC), which directly affected the MSME industry.
 - In addition, with most MSMEs not being listed entities, **their monthly or quarterly business performance filings are also largely unavailable.**
 - The transition to the GST regime affected the MSME sector more than any other, since its players **lack compliance infrastructure** to map their outstanding inventory with tax invoices. Furthermore, its weak credit profile and risk weightages attached to it by banks, pushed it closer to higher credit change options from the non-banking finance segment.

Way forward :-

- **Financial Reporting:**
 - The SMEs also need to back their loan request with tax-returns, balance sheets and other financial documents which speak about the health of the companies.
- **Priority lending to honest taxpayers**
 - The government need to incentivise MSMEs who pay promptly and within timelines. Adding to this, banks and associated financial organisations can introduce priority lending for honest taxpayers based on returns filing. **This would improve the working capital for these businesses and have a positive impact.**
- **Reducing time limit for reversal of ITC**
 - ITC ought to be inverted under the CGST, in case the receiver is unable to pay to the supplier within a time period of 180 days. Ideally, for MSMEs, this time limit should be lowered to 90 days. As, being a part of the working capital and a lifeline for their business, any postponement in the payments is sure to impact business operations at all times.
- **Increasing definition of class of persons**
 - The class of person definition has been raised from Rs 3 crore to Rs 5 crore. An additional increase of Rs 10 crore is recommended because it will then cover MSME service and industrial units, thus, amounting to benefits at large.
- **Adding services to composition scheme**
 - About 48 percent of the GDP is contributed by the service sector and there are several SMEs operating service businesses. Thus, it's vital that services are counted in the composition scheme minus any cap.
- **Adding POS solutions to 'Digital MSME' scheme**
 - As per the recent changes, taxpayers with turnover of up to Rs 5 crore can file GSTR – 1 on a quarterly basis. The best way to tackle this is to use Point of Sale (POS) solutions that provide end-to-end assistance from generating digital invoices to payments to capturing data.
 - MSMEs with a turnover of Rs 2 to Rs 3 crore can easily use POS, along with the associated digital compliance and filing software, to maintain their data and file on time.
- And the government can further expedite this process by subsidizing POS sales. Under the 'Digital MSME' scheme that promotes cloud computing, POS solutions can also be introduced as one of the products.
- Both MUDRA loans as well as the Kisan Credit Card, while popular, have to be examined more closely for potential credit risk. The Credit Guarantee Scheme for MSME (CGTMSE) run by SIDBI is a growing contingent liability and needs to be examined with urgency.

Conclusion:-

- As MSMEs become accustomed to a larger compliance climate, a better level of preparedness and discipline in conducting business will gradually be a part of operation. With the government's commitment to strengthen MSMEs on all fronts, the current challenges will stabilize and gradually take a positive turn to fulfill the nation's 'Make in India', 'Skill India' as well as 'Startup India' visions.

Q) The central bank policy has to be guided by financial markets rather than by a government headed by politicians with electoral compulsions. Comment in the light of recent RBI controversy. (250 words)



Why this question

The article discusses the intricacies and dilemmas faced by the RBI in the neoliberal regime. It also discusses the inability of interest rate policy as a tool for achieving the multiple and sometimes even contradictory goals.

Directive word

Comment- here we have to express our knowledge and understanding of the issue and form an overall opinion thereupon.

Key demand of the question.

The question wants us to dig deeper into the ongoing RBI- Govt. controversy and express our opinion as to whether the RBI policy decisions should be simply guided by financial markets without any interference by the government. We have to form our opinion based on a proper discussion and presentation of facts, arguments.

Structure of the answer

Introduction– write a few introductory lines about the recent controversy surrounding the RBI and mention sec 7 of the RBI act.

Body-

Express your opinion as to why RBI policy should not be simply guided by the financial markets. E.g This is obviously an undemocratic position, for it amounts to saying that crucial decisions affecting people's lives should be outside their sphere of intervention through the electoral process; It is also a dangerous position since financial markets are dominated by speculators. As Keynes had pointed out, not only is market incapable of distinguishing between enterprise and speculation, but speculators, far from being "bubbles on a steady stream of enterprise", create instead a "whirlpool" upon which enterprise itself becomes a mere bubble. The livelihood of over a trillion people cannot be made "a by-product of the activities of a casino"

Discuss why RBI policy should not be simply guided by the government. E.g This would not matter if the government itself was socially accountable through, for instance, being subject to parliamentary oversight; in that case, there would be some restraint on its using control over the central bank for furthering the interests of its crony capitalists. But, as we know, the government is refusing to divulge the contents of Raghuram Rajan's note on major bank defaulters even to the Estimates Committee of Parliament etc.

Conclusion– based on your discussion, form a fair and a balanced conclusion on the given issue.

Background:-

- Reserve Bank of India has worked as efficiently as any top central bank of the world right from its inception. It was blessed with absolute independence to control or manage monetary liquidity, price stability, exchange rate stability, and later on financial stability also.
- However recently simmering differences between the Reserve Bank of India (RBI) and the Central government **over issues of public sector bank regulation, resolution of distressed assets and the central bank's reserves, independent payments bank regulator, easing credit to small firms, Section 7 of RBI act** have raised questions about the independence of RBI.

Why RBI policy needs to be guided by financial markets and why it needs to make independent decisions :-

- Governments sometimes tend to make poor decisions about monetary policy. In particular, they tended to be influenced by short-term political considerations.
- Before an election, the temptation is for a government to cut interest rates, making boom and bust economic cycles more likely. Therefore arguably, it is better to take monetary policy out of the government's hands and place it in the central bank's purview.
- An independent Central Bank may have more credibility. If people have more confidence in the Central Bank, this helps to reduce inflationary expectations. In turn, this makes inflation easier to keep low.
- In a central bank dominated by the government, the temptation to tamper with various instruments of monetary policy in order to achieve the government's objectives would be hard to resist. **For instance, the ministry of finance could want to reduce interest rate to push up demand, without considering the impact of rate cut on**



foreign inflows, depreciation of the rupee and increase in domestic money stock and inflation. There could be many more such examples. To avoid this an independent central bank is necessary.

- An independent central bank is essential for ensuring stable and sustainable growth in any economy.
- There are always government entities that are seeking oversight over various aspects of the RBI's activities. Multiple layers of scrutiny, especially by entities that do not have the technical understanding, will only hamper decision making.

Sometimes RBI needs to balance its working with the government due to the following reasons :-

- **Central bank policy cannot be based only on financial markets because:-**
 - Financial markets are dominated by speculators. As Keynes had pointed out, not only is market incapable of distinguishing between enterprise and speculation, but speculators create instead a whirlpool upon which enterprise itself becomes a mere bubble.
- **RBI is autonomous but within the framework of the RBI Act.** It is thus clear that the central bank cannot claim absolute autonomy. It is autonomy within the limits set by the government and its extent depends on the subject and the context.
- Ultimately, it is the elected representative ruling the country who is answerable to the citizen every five years. **The representative while explaining the economy's performance to own up for everything, including the RBI's actions, as his own.**
- In a democracy, it is unthinkable that to have an institution that is so autonomous that it is not answerable to the people. **The risk of such an institution is that it will impose its preferences on society against the latter's will, which is undemocratic.**
- RBI is autonomous and accountable to the people ultimately, through the government.
- The progressive widening and deepening of the activities of the RBI in different sectors of the economy affect the lives of millions.
- Nature will ignore the short term effects of their policies on the economy, the brunt of which has to be borne by the Parliament.

Way forward:-

- **International examples:-**
 - There has to be a forum within the democratic structure where the RBI is obligated to explain and defend its position.
 - Different countries have taken different routes and by and large each model is appropriately tuned to their specific contexts.
 - US example is a good model to work upon. Presentation by the chairman of the Federal Reserve to the Congress makes for public exposure and transparency but does not take away the chairman's autonomy.
- **The governor should be responsible and accountable to Parliament and not to a particular government or the ministry of finance, or minister** He can testify to Parliament twice a year. In separate testimony in both houses of Parliament, the lawmakers can ask questions of the RBI Governor and the latter can respond.
- A better way to sort out these differences and to come to a conclusion is to have a larger debate with technical experts weighing in.
- On issues of operational autonomy, the central government needs to lay off its pressure on the RBI.
- On macro issues such as exchange rate management and RBI's dividend policy, written agreements that clearly demarcate roles and responsibilities can be thrashed out.
- The Monetary Policy Framework Agreement and the FRBM Act are good illustrations of how a mutually agreed rule-based framework can broker peace between the central bank and the executive arm of government.
- If the issues are not resolved, the tussle will undermine investor confidence and strengthens fears about institutional erosion when India is already experiencing economic turmoil.

Q) Why do economies strive for fiscal consolidation and examine whether fiscal expansion during slowdown is advantageous ? (250 words)

Key demand of the question

The question expects us to bring out the advantages of fiscal consolidation. Thereafter, we need to discuss the debate between fiscal consolidation and expansion and examine which of the two during a phase of slowdown would be more advantageous.



Directive word

Examine – When you are asked to examine, you have to probe deeper into the topic, get into details, and find out the causes or implications if any.

Structure of the answer

Introduction – Explain what do you understand by fiscal consolidation and expansion.

Body – Discuss the advantages that are accrued as a result of fiscal consolidation such as peps up market sentiment, helps keep inflation in check etc. Discuss that keeping in view these advantages FRBM act was brought it. Thereafter, move to the next part of the question and examine the phases such as post 2008 crisis and currently when expansion has taken place and the impact of such fiscal expansion.

Conclusion – Give your view on the usage of fiscal expansion as a tool during recession and comment on the recent breaches of FRBM Act.

Fiscal consolidation and why economies strive for it :-

- Fiscal consolidation is defined as concrete policies aimed at reducing government deficits and debt accumulation. The goal of fiscal consolidation in any setting is to improve financial stability by creating a more desirable financial position.
- Fiscal consolidation is a process where government's fiscal health is getting improved and is indicated by reduced fiscal deficit.
- Improved tax revenue realization and better aligned expenditure are the components of fiscal consolidation as the fiscal deficit reaches at a manageable level.
- Fiscal consolidation is required to ensure fiscal discipline in an economy. This has a significant impact on inflation management, stock market, investor confidence etc.
- To achieve the above targets Indian government enacted FRMB Act in 2003. However, during economic recession in 2008 government had to do fiscal stimulus so as to bail out the economy from the spiralling trap.

Fiscal expansion :-

- Fiscal expansion is generally defined as an increase in economic spending owing to actions taken by the government. **Fiscal expansion**, also known as **fiscal stimulus**, is one common way a government can affect economic growth.
- **Why fiscal expansion during slowdown is advantageous :-**
 - During times of economic stagnation, **fiscal expansion** enables the government to encourage growth by changing the levels of spending or taxation.
 - The primary advantages of fiscal expansion are increased economic stimulus and expanded demand for goods and services. Theoretically, fiscal expansion enables companies to increase their output and hire more workers.
 - Fiscal expansion is sometimes used to jump-start a stagnant economy and increase the productivity of private businesses.
- **Concerns :-**
 - A potential problem of expansionary fiscal policy is that it will lead to an increase in the size of a government's budget deficit.
 - **Higher borrowing could:-**
 - Financial crowding out. Larger deficits could cause markets to fear debt default and push up interest rates on government debt.
 - Resource crowding out. If private investors buy government bonds, they have less to use for private sector investment.

Q) A strict inflation targetting regime without any concern for growth is not the right approach for holistic development management. Critically analyze. (250 words)

Key demand of the question

The question wants us to discuss the positive as well as negative aspects of inflation targeting and how it affects development of the country. Based on our discussion we have to form a substantive conclusion on the issue. This is to be done in the context of a strict Inflation targeting approach of



the RBI, which has been criticized for various reasons with restricting development opportunities being the most important of them

Directive word

Critically analyze – When asked to analyze, you have to examine methodically the structure or nature of the topic by separating it into component parts and present them as a whole in a summary. When ‘critically’ is suffixed or prefixed to a directive, all you need to do is look at the good and bad of something and give a fair judgement.

Structure of the answer

Introduction – write a few lines about the mandate of RBI to restrict inflation to 4 +/- 2%. Also mention RBI's recent monetary policy changes like hike in repo and reverse repo rates.

Body

Discuss the positive aspects of such a targeting approach on development. E.g fosters stable macroeconomic conditions; stable inflation rates and expectations- linked to such domestic and business decisions; generates high investment confidence etc.

Discuss the negative aspects. E.g restricts development opportunities, inadequate allocation of public funds for social sectors; propagates social inequality; is insufficient as a measure because of strong association of inflation in India with the supply side etc.

Conclusion– *Based on your discussion form a conclusion as to what should be done in this regard. Your opinion should be supported by further arguments in case needed.*

Policy of inflation targeting :-

- Inflation targeting (IT) is a monetary policy strategy used by central banks for maintaining prices at a certain level or within a specific range. Using methods such as interest rate changes, this could help guide inflation to a targeted level or range. This policy is designed to assure price stability.
- Recently Finance ministry and Reserve Bank of India agreed to adopt flexible IT based on the recommendations of a panel headed by Urjit Patel. (To bring the inflation rate below 6% by January 2016 and to 4% by the financial year ending March 2017, with a band of +/- 2% points)
- Price stability main goal of monetary policy.

Negative impact which led to adverse impact :-

- Created an imbalance between India's foreign exchange debt and its reserves that has brought international hedge funds into the Indian money market.
- Making price stability the first goal of policy, therefore, sacrifices growth at the altar of stability. That is what the RBI has been doing since January 2007.
- **Unrealistic :-**
 - Economy will react and be influenced by thousands of factors and it is not possible to always counter so many influencing elements. Hence, in an attempt to target a certain inflation rate or to keep it within a certain limit, central banks and governments take measures that prove to be wrong.
 - **Many a time in the past and in developed nations, governments and the central banks have not only failed to contain inflation but their attempts have led to more problems.**
- **Against development:-**
 - It is not entirely possible to keep the inflation in check at all times. Even today, there are places in every country where inflation targeting simply doesn't work.
- **Side Effects:-**
 - Inflation targeting can be hazardous for a country in the long term. It can render various industries to become uncompetitive. The governments may take up too much of the onus or the financial burden of keeping inflation under check. This can lead to higher fiscal deficits, poor welfare policies or stimulus packages and eventually the economy may cease to remain as free flowing as is needed.
- **Increases in inflation are not necessarily coupled to any factor** internal to a country's economy and strictly adjusting interest rates will potentially be ineffectual and may restricts economic growth.
- It **neglects output shocks** by focusing solely on the price level and it may leads to potential instability in the event of large supply-side shocks.
- **It may leads to restricted ability of the central bank** to respond to financial crises or unforeseen events.



- Policy of inflation targeting by RBI made borrowing in the Indian market very costly for industrial borrowers, thus increasing their exposure to currency volatility.
- It is insufficient as a measure because of strong association of inflation in India with the supply side.

Positives of inflation targeting :-

- **Balancing Predictability and Expectations**
 - Inflation targeting instills predictability. If one was to take a broader view of the world, then situations will appear to be relatively predictable.
- **Preventing Bubbles and Fuelling Sustainable Growth**
- **Preventing Economic Collapse**
 - Without inflation targeting, costs can skyrocket.
- It allows monetary policy to focus on domestic considerations and to respond to shocks to the domestic economy.
- It facilitates well-informed decision-making by households and investors, reduces economic and financial uncertainty, and increases the effectiveness of monetary policy.
- An explicit numerical inflation target increases a central bank's accountability and it can also insulate the bank from political pressure to undertake an overly expansionary monetary policy.
- In emerging markets Inflation targeting appears to have been associated with lower inflation, lower inflation expectations and lower inflation volatility relative to countries that have not adopted it.

Q) Critically analyze the correlation between a jump in doing business ranking and improvement in business conditions and investment for India ? (250 words)

Indian express

Why this question

The article discusses the correlation between parameters of doing business ranking and actual changes on ground. In light of recent improvement in India's ranking on doing business rankings is a matter of price and its reasons and impacts be discussed in detail.

Key demand of the question

The question expects us to explain the factors responsible for improvement in India's rankings in brief and whether such improvements have positively altered business of all hues. We need to bring out both aspects – advantages of focussing on rankings, and whether we are compromising with other reforms which should have been focussed on.

Directive word

Critically analyze – When asked to analyze, you have to examine methodically the structure or nature of the topic by separating it into component parts and present them as a whole in a summary. When 'critically' is suffixed or prefixed to a directive, all you need to do is look at the good and bad of something and give a fair judgement.

Structure of the answer

Introduction – *Highlight the brilliant improvement seen in India's EODB rankings.*

Body

Discuss the improvements that led to improvement in EODB in India. Discuss the steps that have been taken to improve ranking in specific areas

Examine whether the jump in the ratings is aligned with the experiences of people conversant with the business climate.

Give pros and cons of the ranking metric such as that it represents the sample space in cities, and that the metric is easy to game. Highlight that it does lead to improvement in business sentiments.

Conclusion – *Give a fair and balanced view and discuss way forward.*

Background:-

- World Bank's Doing Business Report is an assessment of business regulation across 190 economies.
- The jump in the ranking, from 100 to 77, is correlated with an improvement in the ratings, a jump of 6.6 per cent over last year.



- Of the 10 categories that together make up the aggregate index, eight saw some improvement over the last year, and two were the same.

Ease of doing business index:-

- Ease of doing business is an index published by the World Bank. It is an aggregate figure that includes different parameters which define the ease of doing business in a country.

Improvement in business conditions:-

- There has been a significant improvement in the paperwork associated with business in many areas of the government.
- Permissions and form submissions of various types have become much easier for those who keep good records. This is true both at the states and the Centre, and the improvement is therefore understandable.
- **Improvement on quite a few parameters has pushed up its overall ranking.**
 - India registered improvement in areas like starting a business, dealing with construction permits, getting electricity, getting credit, paying taxes, and trading across borders.
 - The jump in overall ranking was driven by the “dealing with construction permits” (from 181 to 52) and “trading across borders” (from 146 to 80) parameters.
- **Government efforts:-**
 - The government targeted efforts to address shortcomings for instance, the **National Trade Facilitation Action Plan (NTFAP) 2017-2020** for increasing the efficiency of cross-border trade worked.
 - Launched last year, it is putting in place the architecture for decreasing border and documentary compliance time, permitting exporters to electronically seal their containers at their own facilities, and reducing physical inspections to up to only 5% of all shipments.
 - Likewise, **the implementation of the single-window clearance system for construction permits in Delhi and the online building permit approval system in Mumbai are important.**
- **The goods and services tax (GST):-**
 - There has been an improvement in India’s paying taxes score
- Letting exporters seal their containers electronically at their own facilities, limiting physical inspections to 5% of shipments helped in trade facilitation.

Issues:-

- Ease of doing business survey does indicate that little has changed over the last year in some areas where India historically performs poorly **like enforcement of contracts, paying taxes, and registering property stand out**
 - Each of these are multi-sectoral issues where improvements would require coordinated efforts across multiple layers of the government and, therefore, legal and procedural changes would be more complex.
- **Jump in the ratings is not aligned with the experiences of people conversant with the business climate.**
 - **For instance** Construction, as a business, is typically not very easy to do and requires a multitude of submissions, permissions and even side payments.
- **Issues are not captured :-**
 - **They do not capture the out-of-the process issues related to the daily running of a business**, the various investigations conducted by the revenue department or company law matters or labour-related issues or the various demands of the inspectors of quality and processes.
 - Input costs, demand factors and infrastructure issues are another class of factors that ease of doing business does not intend to capture.
 - **The reality of business in India requires the entrepreneur to focus on a whole range of aspects not covered adequately in such ratings.**
 - For instance, businesses have a problem of employability, poor skills, corruption, and controls on internal trade, avenues for accessing capital for small and micro-businesses being some examples.
 - **Some of these issues are very India-specific and global comparability ratings will rarely capture them in the depth required.**
- **Political influence:-**
 - Recently world Bank’s chief economist raised concerns that the rankings could have been influenced by politics.
- **Methodology issues:-**
 - It limits its sample size to just a few major cities, thus projecting an imperfect picture of overall business conditions.
 - In the real India, it still takes 156 days to get a building plan sanctioned, and 1,445 days in court to get a judicial verdict on a civil dispute.



- Does not directly measure more general conditions such as a nation's proximity to large markets, quality of infrastructure, inflation, or crime.
- Methodological weaknesses, an uncertainty in the ability of the indicators to capture the underlying business climate, and a general worry that many countries may find it easier to change their ranking in Doing Business than to change the underlying business environment.
- Experts wondered **if governments may be gaming the rankings by tailoring their policies to specifically fit the World Bank's criteria** instead of trying to enact wider structural reforms.
- **Questions were raised whether the bank is right to measure a country's business environment based on written legal rules** rather than investigating the actual ground conditions in which businesses operate.
- **Businesses:-**
 - Many businesses, for example, may be able to bribe their way out of bad rules. There was significant variation between World Bank's surveys and actual business conditions.
 - Ease of running a business is just as difficult as before with archaic labour laws, increasingly militant trade unions, undisciplined and low productivity labour, besides the regular rent collecting proclivities of government agencies. There is little sign that this is improving.
- **Insolvency:-**
 - The sluggish rate of resolution of cases that have come under the IBC is becoming a major roadblock.
- **GST:-**
 - Glitches in GST filing may have led to a rise in the number of hours taken in a year to file taxes.
 - Delays in GST refunds have constrained working capital for exporters. The Federation of Indian Export Organisations has stated that the process of input tax credit refund being partly electronic and partly manual has been the main impediment here.

Way forward:-

- Coordination across all departments and between the Centre, the States and local level to get the implementation right and fast.
- It is imperative to create awareness of the reforms introduced so that the enterprises can benefit from it.
- Regular feedback on reforms undertaken, and ensure the reforms are implemented at the ground level.

Q) Private sector investment in infrastructure is facing several headwinds. Analyze and also suggest solutions to pick up private sector investment ? (250 words)

[Livemint](#)

Why this question

The article discusses the contribution made by private sector, both in terms of capital and enterprise, in boosting India's infrastructure sector. Thereafter, it delves into the problems plaguing private investment and potential solutions. At a time when economy is struggling to pick up the pace of private sector investment, the role of private sector capital in developing infrastructure needs attention.

Key demand of the question

The question expects us to first discuss the role played by private sector in developing India's infrastructure, and highlight the headwind in the form of challenges they are facing. Basically we need to explain why very few bids have come from private sector in PPP projects and discuss potential solutions and way forward.

Directive word

Analyze – When asked to analyze, you have to examine methodically the structure or nature of the topic by separating it into component parts and present them as a whole in a summary.

Structure of the answer

Introduction – *bring out the status quo that private sector contributed an estimated ₹20 trillion, or a third of India's ₹60 trillion infrastructure investment, between fiscals 2008 and 2017. However, it has declined sharply in recent years in terms of share of investment, from 37-38% to below 25% in fiscal 2018.*



Body

Bring out the role played by private sector in developing airports, roads etc. Explain how this was done through PPP model

Thereafter bring the headwinds in front of private sector – cost and time overruns leading to NPA problem, issues with risk sharing in the previous model of PPP etc

Discuss potential solutions such as the introduction of hybrid annuity model etc. Bring out potential risks as well.

Conclusion – Give your view on the role and need of private sector in infrastructure sector and discuss the way forward.

Background:-

- Private sector contributed to a third of India's infrastructure investment, between fiscals 2008 and 2017.
- However, it has declined sharply in recent years in terms of share of investment, from 37-38% to below 25% in fiscal 2018.

Why private participation is considered better:-

- Private sector participation in infrastructure delivery helps deliver tangible benefits.
- **Creative:-**
 - In highways, airports, ports and renewables, the private sector's role has been landscape altering.
- **Efficiency:-**
 - The private sector has also delivered efficiently both on project execution as well as operations.
- Private participation enhances **public accountability**.
 - **PPPs bring back trust in public utilities that execute them**, improve service delivery, bridge resource gaps, and help wean away dependence on unsustainable coping solutions which the poor can ill afford.

Why private sector investment in infrastructure is facing problems:-

- Private investments in thermal generation are already in deep trouble with **stranded capacities, stressed loans and weak demand**.
- In railways, and urban infrastructure, **private investments are negligible**
- **Roads:-**
 - Recently, the sector has faced **debt repayment issues and project fund constraints**. It is noted that a few projects are undergoing debt restructuring processes with lenders, leading to delays in project completion.
 - Further, traffic figures of the government tend to be optimistic, leading to the need for independent traffic projections by the private sector causing delays in financial closure.
- **Ports:-**
 - Some of the challenges dampening the progress of PPPs in the port sector include Inadequate cargo handling equipment and navigational aids and information technology systems, insufficient dredging capacity, tariff regulatory risk arising from the Tariff Authority for Major Ports policy, and a lack of technical expertise, all of which have lowered the efficiency of Indian ports.
- **Airports:-**
 - Land acquisition is a major roadblock in the development of airport projects under the PPP mode. Lack of information for bidders and obtaining statutory approvals are some other issues.
 - While airports, ports and power transmission have robust engagement models, **new investment activity is tepid**.
- **Energy:-**
 - Issues such as obtaining environmental clearances, the absence of a dispute resolution facility, the lack of fuel supply and private sector liquidity limits have hampered PPP progress in the energy sector (power, oil and gas).
- **High costs:-**
 - Estimated project costs have significantly escalated in the case of toll projects, hitting the project economics.
- **Toll projects are not sufficiently ready at the time of bidding, hinting at insufficient planning**. This results in the private sector assuming or handling much of the pre-development phase risks such as clearances, land acquisition, and so on, leading to increases in cost overruns.
- **Large number of stalled projects** are blocking infrastructure projects and at the same time adding to NPAs of the banking system.



- **HAM model:-**
 - The hybrid annuity model (HAM) for highway construction is not sustainable, particularly given the already existing stress in the sector.
 - Reason behind the HAM being not sustainable was that developers today didn't have the deep pockets they had 10 years back.
 - Funding is becoming a challenging task for road developers.

Solutions :-

- Capable creditworthy public institutions are an essential prerequisite to attract private investment.
- Expediting creation of a PPP think-tank institution as recommended by the Kelkar committee could help.
- **Create supply-side enablers to deepen the infrastructure financing ecosystem**
 - Stalled projects need to be dealt with steadfastly to nurse private developers and financial institutions to health. Building certainty and capacity to implement the Insolvency and Bankruptcy Code will be crucial.
 - Allied guarantee instruments to strengthen bond markets and expeditious deployment of capital under the National Investment and Infrastructure Fund are facilitations that can help.
- **Transparency and effective policies will be crucial.** Project-wise analysis is required to determine as to who is better placed to take care of the three essential components of each project, i.e., Build, Operate and Finance.
- **Credit ratings must reflect the embedded credit risk to enable the higher flow of credit into the sector.**
 - For instance, a rating should ideally move through downgrades and upgrades in notches to reflect the gradual re-pricing of credit risk.
 - Such credit systems provide the investor base with greater confidence in both the rating system and the credit quality of the underlying market

Q) High Growth Firms have a beneficial spillover effect on MSMEs. Analyze in the context of Indian economy. (250 words)

Livemint

Directive word

analyze-here we have to examine methodically the structure or nature of the topic by separating it into component parts, and present them as a whole in a summary.

Key demand of the question.

The question wants us to write in detail about the importance of HGFs in India and their relationship with MSMEs; how the latter benefit from the former; and factors affect this relationship.

Structure of the answer

Introduction- *write a few introductory lines about the HGFs. E.g The OECD defines high-growth firms (HGFs) as those that employ more than 10 workers, with employment growing at an average annual rate of 20% or more over at least three consecutive years*

Body-

Discuss the importance of HGFs for an economy.. E.g HGFs affect upstream and downstream enterprises positively i.e when small, informal enterprises and large, formal enterprises are able to integrate effectively in supply chains, the barriers that the former face in achieving high productivity growth are lowered.

Discuss the inadequacies of such relationship vis a vis India. E.g Given their smaller balance sheets and less scope for accessing credit, micro, small and medium enterprises (MSMEs) depend to a large extent on timely cash payments from the large companies they supply to in order to function effectively. It often doesn't work out this way. Given their poorer bargaining power and the costs of using the legislation for tackling delayed payments—the MSME Development Act, 2006—micro and small enterprises frequently face inordinate delays in receiving payments. And goods and services tax kinks related to input tax credit are further complicating the picture etc.

Conclusion— *based on your discussion, form a fair and a balanced conclusion on the given issue.*



Background :-

- The Organization for Economic Co-operation and Development defines high-growth firms (HGFs) as those that employ more than 10 workers, with employment growing at an average annual rate of 20% or more over at least three consecutive years.
- The World bank report finds that for the emerging economies it examines, HGFs account for 8-22% of the total number of firms. India falls somewhere near the middle with 14.3%.

High growth firms impact on MSME:-

- They affect upstream and downstream enterprises positively.
 - Upstream industries can utilise their products for quicker completion of projects. Downstream industries can utilise their technological advancements for better delivery of services or manufacturing of supreme quality goods.
- When small, informal enterprises and large, formal enterprises are able to integrate effectively in supply chains, the barriers that the former face in achieving **high productivity growth** are lowered.
- Small group of high-growth small and medium-sized enterprises (HGSMES) make important contributions **to job creation and productivity growth**.
- MSME often **provide or buy raw materials from large industries**, So if HGF improve, MSME will definitely improve.

Negatives:-

- Micro and small enterprises frequently face inordinate delays in receiving payments.
- Market failures in capital markets can make it more difficult to obtain financing than is justified by the potential of start-up and small firms.
- Difficulties in recruiting qualified staff and skilled workers are also considered a major barrier to the fast growth of small business.
- It enables crony capitalism and political subsidies, allowing inefficient firms to rise to the top of the pile.
- Potentially productive firms in Indian manufacturing are unable to obtain financing because of misallocation in land markets, which is the principal form of collateral in business loans.
- HGFs also account for more than 50 per cent of job creation in France, nearly 65 per cent in the Netherlands and close to 90 per cent in Spain. Lack of employment data in India meant that job creation figures are absent
- **Collateral:**
 - Additionally, to avail loans, one needs to offer collateral – a personal property or manufacturing plant or even machinery. Most the SMEs do have much to offer as collateral; hence lending firms view them as high-risk requests.
- More than 90% of MSMEs operate in the informal sector. These firms largely depend on informal sources of credit at higher interest rates.
- Due to demonetization drive, MSMEs were among the worst hit sector as their businesses were cash based. **The response was not just limited to demonetization but also during the GST.**
- MSMEs are exposed to market-linked volatility thus the **credit risk is high**.
- **Other challenges like Impact on MSME due to GST:-**
 - **Costs :-**
 - India's paradigm shift to the Goods and Services Tax (GST) regime will increase their compliance costs and snare a majority of them into the indirect tax net for the first time.
 - GST will have a marginally negative impact because of **higher tax rates**
 - **Input Tax Credit :-**
 - Along with the initial confusion and infrastructure glitches that took some time to stabilize, there were reports of delays in receiving Input Tax Credit (ITC), which directly affected the MSME industry.
 - In addition, with most MSMEs not being listed entities, **their monthly or quarterly business performance filings are also largely unavailable**.
 - The transition to the GST regime affected the MSME sector more than any other, since its players **lack compliance infrastructure**.

Way forward :-

- There is a need to provide timely payment to the MSMEs, reducing factor market distortions such as in land allocation and more spending on research and development



Q) What do you think are the major challenges related to employment in India ? Analyze the reforms brought by the government to address the issue of informalization of workforce ? (250 words)

[Indian express](#)

Why this question

The article discusses the major challenges with respect to employment of people and principles through which the government has tried to deal with this situation. Since employment is such a burning issue, this article will help us become aware of the major areas where work is needed going forward especially when it comes to informalization of workforce.

Key demand of the question

The question expects to us to first give a general picture of the status quo with respect to employment. Post that, we need to discuss the major challenges with respect to employment. Once we bring out the challenges, we need to explain the steps taken by the government to address the issue of informalization of workforce and bring out the pros and cons of the impact it has had.

Directive word

Analyze – When asked to analyze, you have to examine methodically the structure or nature of the topic by separating it into component parts and present them as a whole in a summary.

Structure of the answer

Introduction – Explain with the help of data etc that employment is a major challenge facing India.

Body

Bring out the various challenges with respect to employment – the sheer number of the jobs that have to be created; issues of job security and social security; informalization of workforce etc

Explain the steps taken by the government to address the situation – efforts have been taken to promote formalisation and also the provision of social security to those remaining in the informal sector through steps such as fixed term contract employment , reducing the compliance cost for companies etc

Bring out the impact that such steps have had and what more needs to be done

Conclusion – give your view on how effective these steps have been and the way forward.

Background:-

- India's sustained average growth rate of 7% over the last decade has not been accompanied by sufficient growth in employment. While half of India's population is below the age of 26, the increasing demand for jobs is not being met by the creation of sufficient new economic opportunities.

Challenges related to employment in India :-

- Disproportionate **share of microenterprises**, with 98% of companies employing fewer than 10 workers
- **High rate of informality**, with 90% of employment generated in the informal sector.
 - Roughly nine out of 10 workers are informally employed and lack any social protection.
 - Trade unions have focused their attention on only protecting the rights of workers in the organised sector.
- **Issues with the latest Budget proposals:-**
 - To create quick jobs, the budget mentioned that the government is rolling out fixed-term contractual jobs across industry segments. **Some experts say this will fuel the so-called hire-and-fire system.**
 - **Reducing the EPF contribution should not have been done.** This is a compulsory saving that is a very good support in the long run as it has an EEE (exempt , exempt, exempt) tax treatment.
 - **An industrial and trade policy is needed.** For 20 years after economic reforms began in 1991 there was no National Manufacturing Policy, and the Policy, when it came in 2011, was not even implemented.
- Much of India's low-paying job problems can be attributed to **lack of enough well-paying jobs.**
- Most workers lack adequate education or skills: less than 30% of the workforce has completed secondary education, and less than a tenth has had any vocational training. The educated youth faces high unemployment rates.
- Caste is a big determinant of access to quality jobs.



- *The sheer number of the jobs that have to be created is huge due to the growth in population.*
 - Indian economy needs to generate employment for about 5-7 million people that enter the labour force annually.

Government efforts to reduce informalisation:-

- Government has tried to address the problems of the informal sector through a focused approach which rests on two legs.
- **The first is to promote formalisation and the second is the provision of social security to those remaining in the informal sector.**
- **Introduction of “fixed term contract” employment**
 - Fixed contract workers must be employed under the same working conditions (such as wages, working hours, allowances and other benefits) as permanent workers.
 - Fixed-term workers are also eligible for all statutory benefits available to a permanent workman proportionately, according to the period of service rendered by him/her.
 - Allowing fixed-term employment would help employers to respond to the fluctuating demand and seasonality in their businesses and facilitate the direct employment of workers.
- **Formal employment is also sought to be promoted by reducing the compliance cost for companies.**
 - Under the Ease of Compliance rules, the government has pruned the number of registers mandatory for all establishments to be maintained under nine central Acts to just five from 56, and the relevant data fields to 144 from 933.
- **The government has also taken numerous technology-enabled transformative initiatives such as the Shram Suvidha Portal, universal account number (UAN) and national career service portal** in order to reduce the complexity burden and ensure better accountability.
- In order to reduce the labour law compliance cost for start-ups, the central government has also managed to persuade state governments and Union Territories (UT) to allow **self-certification and regulate inspection under six labour laws wherever applicable.**
- **The Employees’ Enrolment Campaign (EEC) was launched by the government in January 2017** to enrol employees left out of the EPF and provided incentives to employers in the form of a waiver of administrative charges, nominal damages at the rate of Re 1 per annum and waiver of employees share, if not deducted.
- The most important reform for construction sector is the introduction of **Universal Access Number (UAN)**. If a construction worker migrates from one state to another (which is common), the benefit of registration will not be lost due to the portability of the UAN.
- Government is also in the process of finalising Labour Code on Social Security.

Government efforts failed:-

- **The advent of the Fourth Industrial Revolution** and automation poses even more dangers to present formal sector jobs since workers with current skills will be rendered obsolete unless they undergo skill reorientation.
- **People-pleasing policies**, such as pay hikes through successive pay commissions, have made recruitment an expensive affair for the government itself, particularly for the state governments, who find it difficult to match up to the central government pay-packages with their limited resources. **Permanent posts lie vacant.**
- Restrictive labour laws which promote contract hiring in order to circumvent rigid hiring and firing provisions.
- **Absence of thrust on manufacturing** can lead to creation of formal employment for millions looking to move away from agriculture.
- **Market-mechanisms and competition led to closure of obsolete industries** such as textile mills, reducing formal jobs. The newer industries were capital intensive rather than labour intensive, thus absorbing lesser workforce than what they laid to retrenchment of.
- **Lack of an exit mechanism** such as insolvency and bankruptcy laws has led to firms remaining small, barely breaking even, and not scaling up. Such small firms can circumvent formal sector laws such as mandatory registrations with the EPFO etc. rendering them informal.

Way forward:-

- In order to help workers adapt to changing demand, India must develop an enhanced skills development framework. Such a framework should be accessible, driven by demand, linked to employment opportunities and enable individuals to quickly up-skill and re-skill.
- The quality of Indian education should be improved. The current education system is not upto the level.
- Today’s youth should join the institute or select the course where proper training is given and the course is as per the current industries requirements.



- Government should encourage and develop the agriculture based industries in rural areas so that the rural candidates don't migrate to the urban areas.
- Special packages are needed for labour-intensive industries to create jobs.
- There should be cluster development to support job creation in micro, small and medium enterprises (MSMEs).
- **More focus on women participation**
 - Girls are losing out in jobs, or those with increasing education can't find them, despite having gotten higher levels of education.

TOPIC: Effects of liberalization on the economy, changes in industrial policy and their effects on industrial growth.

Q) Examine the role played by NBFC sector in the Indian economy and issues plaguing the sector ? (250 words)

Indian express

Why this question

The question discusses the role NBFC sector has played in the Indian economy and delves deep into the nature of liquidity issue that is faced by the sector in the backdrop of IL&FS crisis. The issue of NBFC has been in the news and is currently at the centre of alleged tussle between RBI and Govt. Hence this question is important.

Key demand of the question

The question expects us to first explain what NBFCs are and the role they play in our economy. Thereafter we need to explain the problem of liquidity crisis in the sector and RBI's position on it. Finally, we need to discuss what needs to be done to address the crisis.

Directive word

Examine – When you are asked to examine, you have to probe deeper into the topic, get into details, and find out the causes or implications if any .

Structure of the answer

Introduction – Explain what NBFCs are

Body

- *Discuss the role played by NBFC sector in the economy – NBFCs being financial intermediaries are supposed to play a supplementary role to banks. NBFCs, especially those catering to the urban and rural poor – including the micro-finance institutions (NBFC-MFIs) and asset finance companies – have a complementary role in the financial inclusion agenda of the country. Further, some of the big NBFCs – infrastructure finance companies – are engaged in lending exclusively to the infrastructure sector, and some are into factoring business, thereby giving a fillip to the growth and development of various sectors. In short, NBFCs bring diversity to the financial sector.*
- *Discuss the issues plaguing NBFC – that of liquidity crunch, regulatory challenges etc. Explain the relevance of IL&FS crisis and how it is related to the problems being faced currently.*
- *Discuss how government and RBI have responded to the situation and the steps taken by RBI to address the liquidity problem of NBFCs*

Conclusion – Give your view on the way this problem should be dealt with.

Background:-

- Non-Banking Financial Companies (NBFC) are establishments that provide financial services and banking facilities without meeting the legal definition of a Bank. They are covered under the Banking regulations laid down by the Reserve Bank of India and provide banking services like loans, credit facilities, TFCs, retirement planning, investing and stocking in money market.
- However they are restricted from taking any form of deposits from the general public. Some of the examples of NBFC in India are Bajaj finance, Mahindra and Mahindra financial services etc.



- Recently Indian non-banking financial companies (NBFCs), especially housing finance companies, have witnessed a fall in valuations and rising bond yields. Liquidity for NBFCs has also significantly contracted across the board.

Role of NBFC in Indian economy:-

- Profitability :**
 - NBFCs are more profitable than the banking sector because of lower costs. This helps them offer cheaper loans to customers. As a result, NBFCs' credit growth is higher than that of the banking sector with more customers opting for NBFCs.
- Infrastructure Lending :**
 - NBFCs contribute largely to the economy by lending to infrastructure projects, which are very important to a developing country like India. Since they require large amount of funds, and earn profits only over a longer time-frame, these are riskier projects and deters banks from lending
- Promoting inclusive growth :**
 - NBFCs cater to a wide variety of customers both in urban and rural areas. They finance projects of small-scale companies, which is important for the growth in rural areas. They also provide small-ticket loans for affordable housing projects. All these help promote inclusive growth in the country.
- Variety of sectors:-**
 - NBFCs are beginning to meet the consequent unmet demand for credit across a variety of sectors and ensuring continuing credit flows to the real economy.
- NBFCs have been **maintaining low net NPA ratios** of 3.5% unlike their banking sector counterparts.
- NBFCs have been found to be relatively more resilient to stress** applied for credit risk as observed by the RBI in its financial stability reports of the past two years. NBFCs, even under severe stress conditions, continued to remain stable.
- NBFCs have been able to complement the credit intermediation by banks by serving regions**, sectors and customer segments that banks have either been unable or unwilling to serve profitably.
- NBFCs often take lead role in providing innovative financial services to Micro, Small, and Medium Enterprises (MSMEs) most suitable to their business requirements.
- NBFCs do play a critical role in participating in the development of an economy by providing a fillip to transportation, employment generation, wealth creation**, bank credit in rural segments and to support financially weaker sections of the society. Emergency services like financial assistance and guidance is also provided to the customers in the matters pertaining to insurance.

NBFC's aid economic development in the following ways

- Mobilization of Resources – It converts savings into investments
- Capital Formation – Aids to increase capital stock of a company
- Provision of Long-term Credit and specialised Credit
- Aid in Employment Generation
- Help in development of Financial Markets
- Helps in Attracting Foreign Grants
- Helps in Breaking Vicious Circle of Poverty by serving as government's instrument

Issues plaguing NBFC sector in India :-

- NBFC is **passing through a turbulent period following a series of defaults by Infrastructure Leasing and Financial Services (IL&FS)** and the subsequent liquidity crunch.
 - Several corporates, mutual funds and insurance companies had invested in short-term instruments such as commercial papers (CPs) and non-convertible debentures (NCDs) of the IL&FS group that has been defaulting on payments since August.
 - This has stoked fears that many of them could have funds stuck in IL&FS debt instruments which, in turn could lead to a liquidity crunch in their own backyard.
- There are rising fears that the funding cost for NBFCs will zoom and result in a sharp decline in their margins.**
- Higher borrowing costs and narrowing options to raise funds** will pose challenges for retail non banking finance companies (NBFCs) in the fiscal year ending March 2019 .
 - The bond yields have gone up sharply to around the 8% mark. That is making borrowing costlier even at the short end of the yield curve.
- NBFCs are likely to **witness higher pricing pressure** as competition in the retail segment intensifies going forward this is expected to be accentuated by narrowing funding avenues and higher systemic rates.
- Higher fuel prices, weaker dollar and the trade war could hit the SME sector badly. This would mean defaults by SMES, **which have been a traditional market for NBFC lending.**



- Investors are worried about a credit downgrade backlash on NBFCs. That could mean huge write-offs for investors.
- Mutual funds** who have invested in market instruments of NBFCs have faced increased redemption pressures.

Measures taken:-

- In 1996, following the collapse of a large NBFC, RBI mandated that no new NBFC would be permitted to raise deposits from the public. Subsequently, when the NBFC sector began relying heavily on the banking system for funding, RBI put in place exposure limits for lending to the NBFC sector. RBI also introduced asset side prudential guidelines for NBFCs.
 - RBI is likely to tighten the guidelines for NBFCs**, bringing them almost on par with commercial banks in terms of regulation.
- After the 2008 financial crisis, the RBI has prescribed **tighter prudential norms for NBFCs**. The minimum tier-I capital requirement was raised to 10% from 7% in a phased manner by the end of March 2017.
- Asset classification norms were revised from 180 days to 90 days in a phased manner by the end of March 2018**, in line with that of banks. Analysts say NBFCs are facing a liquidity squeeze and not a new credit shock.
- The **RBI opened a three-day special liquidity window of Rs 25,000 crore for banks** to meet the cash requirements of debt mutual funds facing redemption pressures after bond prices fell leading to lower Net Asset Values.

What needs to be done:-

- Given the growing size and dominance of the NBFC sector, it is important that the threshold capital levels for entry be substantially increased. It may be **prudent for RBI to evaluate the need to shore up minimum capital requirements for various NBFCs**.
- While RBI has identified systemically important NBFCs, **it needs to step up the monitoring of NBFCs which belong to large, diversified groups**. Checks and balances are needed to ensure that risks do not build up in the sector due to structures which are too-complex-to-manage.
- RBI could consider re-visiting some of the unimplemented recommendations of the Working Group on Issues and Concerns in the NBFC Sector chaired by Usha Thorat in 2011**.
 - One such recommendation was the introduction of a liquidity coverage ratio for NBFCs. The objective was to ensure that NBFCs have cash balances and holdings of government securities which may fully cover gaps between cumulative outflows and cumulative inflows for the first 30 days. This would be the buffer in times of stress.

Q) Discuss the various factors that led to meteoric rise in India's Ease of doing business ranking and critically analyze the impact of such improvement ? (250 words)

Livemint

Why this question

This article discusses the various reform measures which helped India in securing a huge jump in its EODB rankings. The article also examines what India's improvement in EODB metric actually indicates. Doing business ranking has been in the news recently and requires detailed preparation.

Key demand of the question

The question is divided into two parts. In the first part we need to discuss the various reform measures which enabled India to secure an improvement in rankings. Thereafter we need to critically examine whether the improvement in rankings actually translate to a change in ground level situation or is it merely a surface level change.

Directive word

Discuss – Here your discussion should list out the various reforms which have brought about an improvement in India's Doing Business ranking.

Critically analyze – When asked to analyze, you have to examine methodically the structure or nature of the topic by separating it into component parts and present them as a whole in a summary. When 'critically' is suffixed or prefixed to a directive, all you need to do is look at the good and bad of something and give a fair judgement.



Structure of the answer

Introduction – Highlight the improvement in India's ranking in Doing Business report.

Body

- Discuss about the reforms in various areas which have helped India improve its score on metrics such as getting construction permit, trading across boundaries etc. Also discuss the reforms in areas where India registered an improvement in doing business metric.
- Discuss the advantages that this improvement would have on improving business metrics such as the perceived improvement in business sentiment, attracting FDI, taking the economy on the pathway of reforms etc
- Discuss the limitations of an approach that gives too much importance to improving India's ranking such as the criticism that the rankings are not reflective of actual ground situation and represents a miniscule sample space etc

Conclusion – Give your view on India's improvement on the EODB rankings and what it means for the Indian economy and the next steps that should be on India's reforms agenda.

Background:-

- World Bank's Doing Business Report is an assessment of business regulation across 190 economies. India has jumped 23 places to rank 77 in the Doing Business 2019 report.

Highlights of 2019 report:-

- India became the top ranked country in South Asia for the first time and third among the BRICS.
- Highest improvement (53 ranks) in 2 years by any large country since 2011.
- India recognised among top 10 improvers for the second consecutive year.
- First BRICS and South Asian country to be recognised as top improver in consecutive years.

Reasons why India's ease of doing business improved:-

- **Improvement on quite a few parameters has pushed up its overall ranking.**
 - India registered improvement in areas like starting a business, dealing with construction permits, getting electricity, getting credit, paying taxes, and trading across borders.
 - The jump in overall ranking was driven by the "dealing with construction permits" (from 181 to 52) and "trading across borders" (from 146 to 80) parameters.
- **Government efforts:-**
 - The government targeted efforts to address shortcomings for instance, the **National Trade Facilitation Action Plan (NTFAP) 2017-2020** for increasing the efficiency of cross-border trade worked.
 - Launched last year, it is putting in place the architecture for decreasing border and documentary compliance time, permitting exporters to electronically seal their containers at their own facilities, and reducing physical inspections to up to only 5% of all shipments.
 - Likewise, **the implementation of the single-window clearance system for construction permits in Delhi and the online building permit approval system in Mumbai are important.**
- **The goods and services tax (GST):-**
 - There has been an improvement in India's paying taxes score
- Letting exporters seal their containers electronically at their own facilities, limiting physical inspections to 5% of shipments helped in trade facilitation.

India will benefit from these rankings:-

- As the World Bank ranks 190 countries, investors have a comparable template to make cross border investment decisions.
- The ranking provides a significant input to their decision-making process
- It acknowledges the structural reforms the government has been undertaking.
- Improvement in India's rank will boost SMEs, job creation: World Bank.
- There are examples across the world where an improved Doing Business ranking has resulted in increased employment and inclusive growth.

Constraints:-

- **Insolvency:-**
 - The sluggish rate of resolution of cases that have come under the IBC is becoming a major roadblock.
- **GST:-**
 - Glitches in GST filing may have led to a rise in the number of hours taken in a year to file taxes.



- Delays in GST refunds have constrained working capital for exporters. The Federation of Indian Export Organisations has stated that the process of input tax credit refund being partly electronic and partly manual has been the main impediment here.
- **Issues with methodology:-**
 - The Doing Business report bases the rankings on field surveys and interviews with corporate lawyers and company executives in Delhi and Mumbai.
 - The report has often attracted criticism for not being representative enough.

Way forward:-

- Coordination across all departments and between the Centre, the States and local level to get the implementation right and fast.
- It is imperative to create awareness of the reforms introduced so that the enterprises can benefit from it.
- Regular feedback on reforms undertaken, and ensure the reforms are implemented at the ground level.

Q) Discuss the of land reforms carried out in India since independence ? Do you think digitisation of land record is the most crucial land reform that can be undertaken in the present age ? (250 words)

Key demand of the question

The question expects us to explain in brief the diverse nature of land reforms undertaken in our country. Your answer should cover the aims they were trying to achieve, the result, the impact etc. Thereafter, move on to establishing the need for a digitisation drive for land records, and ways we can go about it

Directive word

Discuss – The various land reform initiatives undertaken by the government since independence has to be explained in brief – the aims they were trying to achieve, the result, the impact etc.

Structure of the answer

Introduction – Mention the overall need for land reforms in a country like India. Discuss whether the issue of land reform is still relevant, so many years after independence.

Body – Explain the various land reform measure undertaken by government since independence in brief. Emphasize that digitisation of land reforms despite multiple efforts by government through programmes like DILRMP 2008 etc have been, but breakthrough has been elusive. Explain why digitisation of land record is required. Mention the steps taken by government like Andhra Pradesh towards this end, as well as the opportunity provided by blockchain technology.

Conclusion – Examine whether digitisation of land record would help in resolving the issues related to land reforms and suggest way forward.

Background:-

- Nearly two-thirds of all pending cases in Indian courts are related to property disputes. NITI Aayog has said that such property cases take an average of 20 years to settle. The result is that millions of Indians cannot use their principal asset as collateral to borrow from the formal financial system. Hence the need for land reforms in India. The government has now pushed the year of completion to 2021.

Land reforms in India :-

- The process of land reform after independence basically occurred in two broad phases.
 - The first phase also called the phase of institutional reforms started soon after independence and continued till the early 1960s focussed on the following features:
 - Abolition of intermediaries like zamindars, jagirdars, etc.
 - Tenancy reforms involving providing security of tenure to the tenants, decrease in rents and conferment of ownership rights to tenants
 - Ceilings on size of landholdings
 - Cooperativization and community development programmes.
 - The second phase beginning around the mid- or late 1960s saw the gradual ushering in of the so-called Green Revolution and has been seen as the phase of technological reforms.



- **Failure:-**
 - The absence of adequate land records made implementation of these acts difficult.
 - **Personal cultivation:**
 - 'Personal cultivation' was very loosely defined which led to not only those who tilled the soil, but also those who supervised the land personally or did so through a relative, or provided capital and credit to the land, to call themselves a cultivator.
 - The provisions introduced to protect the small landowners were misused by the larger landlords with the active connivance of the revenue officials.
 - The long delay and the nature of the legislation, ensured that the ceilings would have a very muted impact as by the time the ceiling legislations were in place, there were barely any holdings left above the ceiling .

Earlier instances of digitisation of land records:-

- Making land records available to all, to contain/check property frauds, became one of the objectives of the government of India in the late 1980s.
- To address the same, the Digital India Land Records Modernisation Programme (DILRMP) was launched by the government of India in August 2008.
 - The main aim of the programme, was to computerise all land records, including mutations, improve transparency in the land record maintenance system, digitise maps and surveys, update all settlement records and minimise the scope of land disputes.
- Digitisation would provide clear titles of land ownership that could be monitored easily by government officials, to facilitate quicker transactions. This will also reduce construction timelines and the overall cost for the developer, the benefits of which can be transferred to the consumer, making property prices more attractive.

However the reforms failed :-

- **Insufficient data:-**
 - Although the government wants complete digitisation of land records, due to the lack of clear and sufficient data and mismanagement between the various agencies handling land records, the data registered at various government levels is not identical.
- Statistics from the DILRMP show that in most states, **the digital land record database has not been synced with the digitised land registration database.**
- **Experience from states:-**
 - Progress over the past decade has been uneven, with some states, such as Madhya Pradesh, Andhra Pradesh, Telangana, Chhattisgarh, Tamil Nadu and Maharashtra, doing better than the others. However, there are challenges, even in advanced states such as Maharashtra.
- New digitized land records do a good job in reflecting ownership of land, **but less so when it comes to recording encumbrances and area of land parcels.**

Reasons why digitisation of land records is a priority now:-

- **States are already focusing on these :-**
 - Bhoomi Project in Karnataka led the way even before the Union government got into the act. The relevant document i.e., the record of rights, tenancy and crops has been made available through kiosks. The need to pay bribes to get access to this basic information in government offices has been done away with.
 - **The Rajasthan legislature passed the Rajasthan Urban Land (Certification of Titles) Act. This law ensures that the state government is a guarantor for land titles in Rajasthan,** and will provide compensation in case of issues of defective title. The guarantee is based on certification provided by the Urban Land Title Certification Authority, which will verify ownership of any property for a fee.
 - Andhra Pradesh :-
 - Its state government has tied up with a Swedish firm to use new blockchain technology to prevent property fraud. As in all other trades, blockchain will allow participants in a distributed ledger to check the ownership of a land parcel.
- **Advantages of having land records digitized:-**
 - Clear land titles will ease a lot of constraints from making it easier for the poor to borrow from the formal financial sector to easing commercial land acquisition for infrastructure projects instead of the misuse of eminent domain.
 - **Complicated structures will become simplified:-**
 - In the past, most of the land records in the country were through village maps, marking boundaries and/or paper records, which included the names of the occupants. Moreover, various types of



information like property maps and sale deeds, are maintained by different departments at the village level. **These departments work alone and their personnel lack training on digital access.**

- Due to the lack of maintenance of streamlined land records, there have been litigations, scams and property disputes over land ownership. A digital department, hence, has to be set up, for better maintenance of land records.
- **Digitisation of land records, will lead to transparency and reduce the time taken to procure**
- **Benefits to real estate :-**
 - Registered property title documents should be provided by the government, as evidence of ownership. **This will also encourage faster transactions and completion of projects in the real estate industry.**
 - Development of infrastructure to support national growth, will also require litigation-free land for commercial and residential use.
 - Unclear land titles, accompanying costs due to title disputes and litigation and lack of transparency in real estate transactions, make the real estate market seem sluggish, while clear land titles will help in accelerating the pace of new projects.
 - Greater ease of doing business in the sector, by making it simpler for the developers and buyers to check the authenticity of the land or the property.
- **Resolution of land disputes** have to be solved, then, digitisation of land records, vis-à-vis site plans, location, ownership details, khata details, property tax and other cesses payable on the property, is very important.
- **Digitisation of land and property records, will also directly boost the government's Digital India mission.**
- A complete computerised compilation of land data, starting from the original owner to the present status of land, including an image of the property and the landowner for identification purposes, will reveal the total area of land owned by a person.
- **A fresh survey of every parcel of land at regular intervals, should be undertaken, to update the records.** This will also help, in avoiding confusion between government land and private land. Transparency through digitisation, will make it difficult for the general public to evade property tax.
- Digitisation can speed up the process of land acquisition, thereby, making it easier for the government to work on its Smart Cities mission or plan industrialisation.
- For home buyers, digitisation will offer the correct details of the owner of a particular property. The buyer can also check if the land is under litigation. If a buyer wants to buy a property from a developer, he or she can check if the building has adhered to all the regulations.
- Similarly, digitisation will help the buyer to check for transparent market-based pricing, before buying a plot of land.

Q) We have seen landmark shift in Indian Economy since the adoption of new economic policy in 1991. Discuss the impact that it has had on different sectors of economy ? (250 words)

Key demand of the question

The question expects us to bring out the impact of changes made in industrial policy since 1991 has had on different sectors of the economy viz. Agrarian, manufacturing and services sector. We need to discuss both the good and the not so good impacts.

Directive word

Discuss – This is an all-encompassing directive – you have to debate on paper by going through the details of the issues concerned by examining each one of them. You have to give reasons for both for and against arguments.

Structure of the answer

Introduction – Explain why adoption of new economic policy was such a landmark step.

Body

Discuss the impact on agriculture sector – share in economy, changes in cropping pattern, restriction on subsidies, greater impact of global prices etc



Discuss the impact on manufacturing sector – share in economy increased, transitioned to be a service led economy, directly from an agrarian one, premature deindustrialization etc

Discuss impact on services sector – growth in IT and Banking sector, improvement in exports etc

Conclusion – Give your view on the overall impact it has had on the economy.

Background:-

- The New Industrial Policy of 1991 comes at the center of economic reforms that launched during the early 1990s. The key objective of the Industrial Policy Statement of 1991 was to maintain the growth of productivity, provide employment and optimally utilize the human resources to achieve international competitiveness.
- The policy has brought changes in the following aspects of industrial regulation:
 - Industrial delicensing
 - Deregulation of the industrial sector
 - Public sector policy (dereservation and reform of PSEs)
 - Abolition of MRTP Act
 - Foreign investment policy and foreign technology policy.

Impact the policy had on different sectors of the economy :-

Agriculture :-

- The reforms had an impact on the agricultural sector through the central government's effort to withdraw the fertilizer subsidy and place greater emphasis on agricultural exports.
- Agriculture has attained near self-sufficiency in food grains. Both green revolution and liberalisation of India's agriculture have favourable effects on overall as well as agricultural GDP.
- **Negatives:-**
 - **But the structural adjustment programme for agriculture has increased the vulnerability of agriculture.**
 - The attempt to globalize and marketise agriculture has been a serious setback to the food security of the poor and vulnerable people. These people are now being squeezed by rising costs of inputs (e.g., credit, power, etc.), reduction of subsidies, etc.
 - The farmers are committing suicides and are fighting with Government for illegal acquisition of land for developing Real estate or other commercially viable projects at the cost of Agriculture.
 - Indian agriculture has been hit hard during post WTO period (1995 – 2003).
 - The share of agro goods in India's global export has declined during this period. During post WTO period, agricultural subsidies of developed countries have been rather increased. Therefore it is very difficult for India to face global agricultural competitiveness.
 - The returns of various crops have declined due to increase in cost of production, slow growth of agricultural productivity, weak marketing mechanism, increase in input intensity and fall of water table.

Industry sector:-

- Share of Industry still remains stagnantly low .
- Worst is that India has transitioned to be a service led economy, directly from an agrarian one. One expiation of this is end of policy of imports substitution which derived industrial growth upto 1990.
- Foreign companies got free access to Indian markets and made domestic products uncompetitive. They obviously had better access to technology and larger economies of scale.
- Due to the opening up of the Indian economy, the manufacturing sector underwent painful restructuring. Some drastic measures included plant closures, sell-offs and relocation and unmatched lay-offs and retrenchments, some of which are yet to be properly recognised.
- However, it has **improved production efficiency to face global competition**, especially from China. Although research and development (R&D) investments have contracted as a proportion of the domestic output, **the restructuring, and competitive pressure seems to have spurred innovation and product development**

Services sector:-

- Human resources have been much cheaper in developing economies. This was further facilitated by IT revolution and this all culminated in exodus of numerous jobs from developed countries to developing countries.
- **IT industry**
 - Software, BPO, KPO, LPO industry boom in India has helped India to absorb a big chunk of demographic dividend, which otherwise could have wasted. Best part is that export of services result in export of high value.



▪ Banking

- Further, in banking too India has been a gainer. Since reforms, there have been three rounds of License Grants for private banks. Private Banks such as ICICI, HDFC, Yes Bank and also foreign banks, raised standards of Indian Banking Industry.
- Now there is cut through competition in the banking industry, and public sector banks are more responsive to customers.

▪ Telecom Sector

- After reforms, private telecom sector reached pinnacle of success. And Indian telecom companies went global. However, corruption and rent seeking marred growth and outlook of this sector.
- Entry of modern **Direct to Home** services saw improvements in quality of Television services on one hand and loss of livelihood for numerous local cable operators.

Q) Critically analyze the impact economic Liberalization has had on growth and trade for agriculture in India ? (250 words)

Key demand of the question

The question expects us to bring out the positive and negative impact that economic Liberalization has had on growth and trading in agricultural sector.

Directive word

Critically analyze – When asked to analyze, you have to examine methodically the structure or nature of the topic by separating it into component parts and present them as a whole in a summary. When ‘critically’ is suffixed or prefixed to a directive, all you need to do is look at the good and bad of something and give a fair judgement.

Structure of the answer

Introduction – Mention the objective with which the process of economic Liberalization was initiated and highlight that it has affected all sector including agricultural sector.

Body

Discuss the positive impacts such as an influx of technology, greater availability of credit, investment in food processing sector, contract farming, opened up export market etc

Discuss the negative impact such as price variability due to variation in global markets, share in economy decreased, shift in focus of policy makers, migration and farmers’ suicide in worst cases etc

Conclusion – Give a fair and balanced opinion and discuss way forward.

Background:-

- The key objective of the Industrial Policy Statement of 1991 was to maintain the growth of productivity, provide employment and optimally utilize the human resources to achieve international competitiveness.
- Economic liberalization impacted almost all sectors in Indian economy including Indian agricultural sector.

Impact of economic liberalization on growth and trade for agriculture:

▪ Positives:-

- The reforms had an impact on the agricultural sector through the central government’s effort to withdraw the fertilizer subsidy and place **greater emphasis on agricultural exports**.
- **Agriculture has attained near self-sufficiency in food grains.** Both green revolution and liberalisation of India’s agriculture have favourable effects on overall as well as agricultural GDP.
- **Information Technology will facilitate dissemination of information** on development, education, extension, husbandry, marketing, production, and research, to agricultural farmers.
- **Credit:-**
 - The share of rural branches in total number of branches increased over the years.
 - Increase in rural credit since 2001 was largely due to an increase in indirect finance in agriculture and definitional changes that incorporated export-oriented and capital-intensive agriculture under priority sector lending.



- Mechanisation of Indian agriculture has taken place with India getting access to many technologies to improve Indian agriculture
- **The promotion of contract farming ,food processing industries ,educating the farmers about the best practices from around the world helped farmers as well.**
- **Negatives:-**
 - **But the structural adjustment programme for agriculture has increased the vulnerability of agriculture.**
 - The attempt to globalize and marketise agriculture has been a serious setback to the food security of the poor and vulnerable people. These people are now being squeezed by rising costs of inputs (e.g., credit, power, etc.), reduction of subsidies, etc.
 - The farmers are committing suicides and are fighting with Government for illegal acquisition of land for developing Real estate or other commercially viable projects at the cost of Agriculture.
 - Indian agricultural has been hit hard during post WTO period (1995 – 2003).
 - The share of agro goods in India's global export has declined during this period. During post WTO period, agricultural subsidies of developed countries have been rather increased. Therefore it is very difficult for India to face global agricultural competitiveness.
 - The returns of various crops have declined due to increase in cost of production, slow growth of agricultural productivity, weak marketing mechanism, increase in input intensity and fall of water table.
 - Trend towards a greater casualisation (erratic and low-paid work) of the workforce that was witnessed in the 1980s appears to have continued in the 1990s.
 - Low productivity and inability to absorb the growing labour force make the agricultural sector in India witness to a pervasive process of marginalisation of rural people.
 - Agricultural trade liberalization has exposed domestic producers to the volatilities of international prices of agricultural commodities that have turned agriculture into an unviable occupation.
 - **Share in GDP:-**
 - Growth rate of gross domestic product (GDP) of agriculture has declined since the initiation of economic reforms in India.
 - **Growth-rate in production:-**
 - The growth rates of production and yield of most of the major crops have declined in the years following the initiation of economic reforms as compared to the 1980s. Exceptions to this general trend were observed for pulses and cotton.
- **Capital formation in agriculture:**
 - The declining trend in capital formation since the 1990s implies that there has been lesser investment in agriculture as compared to the non-agriculture sector

Way forward:-

- **Invite technological investments in the farm sector** both by the Government and the private sector. For increasing productivity, scientific innovations specially a well designed foolproof mechanism for implementation of genetically modified crops will have to be established in the country.
- The **credit system needs to be revamped** and the Pradhan Mantri Jan Dhan Yojana should be utilised. The private sector agro-processing players should be given incentive to provide credit to the farmers.
- There is a **need that State-specific problems and innovations be allowed and flexibility** and new approach should be rewarded.
 - For example the cost norm for Manipur, Tripura and Rajasthan and Uttar Pradesh cannot be the same.
- **Adopting a holistic and integrated approach in ensuring convergence in the management of animal husbandry, fisheries, agro-forestry, minor forest produce and agro-minor forest-based micro and medium enterprise** specially in the rain-fed areas.
- There is need for immediate steps to **create brooder houses in each block for the marginal farmers** and landless agricultural workers and tenet farmers to augment their income and to increase the production of eggs and protein.
- Indian cows produce A2 milk which is genetically and health wise better .The **Government must review its policy and revive the indigenous milk producing cow breeds** like Shahiwal, Gir, Red Sindhi, Tharpakar, Rathi, Kankrej, Ongole and Hariana to name a few by taking up breed improvement programmes.
- **Private sector players should be invited to set up cold storages and silos** to prevent damage of food grains and vegetables and fruits.
- There should be a **separate Budget for agriculture** considering the situation of farming sector in the country and its potential.



- **A 20 Year Vision & Implementation Road Map to enable suppliers:**
- Essential to this would be consolidation of farmers and their land into large groups without them losing land title. This will help in gaining collective scale and can be implemented in two ways
- **Large Farmer Producer Organizations (FPOs)** need to be properly networked and federated, regionally as well as centrally.
- **Encourage Land Banks** in especially hills and semi-arid areas where farming is difficult.
- **State of the art infrastructure in areas** like storage & transportation, knowledge & information, credit & insurance etc. needs to be established.
- **A clear plan to reduce dependence on agriculture** from an untenable 60% to a more sustainable 30%. Agricultural policies would do well to address the need to make agriculture more efficient and less burdened. Also, enabling supporting professions for people looking for alternate careers would go a long way.

Q) Examine the reasons India lags behind in contract enforcement in EODB rankings ? Suggest what needs to be done ? (250 words)

Livemint

Why this question

India has recently made rapid strides in doing business ranking system. While improvement has been seen across various parameters, one aspect where India has remained stagnant is in enforcing contracts. Considering the importance contracts have for businesses, it is one aspect which needs close attention and hence this question.

Key demand of the question

The question expects us to bring out the current rank of India in enforcement of contracts and explain the reasons why India has not been doing so well. Next, we need to explain in brief the impact of non enforcement of contracts for businesses and give suggestions on what can be done to improve the situation.

Directive word

Examine – When you are asked to examine, you have to probe deeper into the topic, get into details, and find out the causes or implications if any .

Structure of the answer

Introduction – Mention that while India's overall position in doing business ranking has gone up, in contract enforcement we haven't improved.

Body

Explain the reasons why contract enforcement is important for a business.

Explain the reasons behind poor performance on this particular metric – lack of commercial courts despite regulatory changes, Government contracts get modified or nullified post contract signing, leading to significant damage to shareholder value, bring out the issues with revision of power purchase agreements in case of electricity companies etc

Give suggestions as to what can be done to improve the situation – setting up commercial courts, beefing up the arbitration process etc

Conclusion – Emphasize on the importance of improving on this metric and discuss way forward.

Background:-

- World Bank's Doing Business Report is an assessment of business regulation across 190 economies. India has jumped 23 places to rank 77 in the Doing Business 2019 report.
- In contract enforcement India stands at 164 rank out of 190 countries.

Reasons why India lags behind in contract enforcement are:-

- In business practices in India, there is **significant disregard for upholding commercial contracts.**



- **Failure of states:-**
 - In spite of regulatory changes allowing dedicated commercial courts to be established by state governments, **hardly any state has actually set up the commercial courts which could have helped in greater contract enforcement in the country.**
- **Contract enforcement is not just a challenge with other private sector entities but also with the government:-**
 - Government contracts get modified or nullified post contract signing, leading to significant damage to shareholder value.
 - This has especially been observed in the infrastructure sector, where concessionaire agreements have been summarily discarded, with the remark that the concessionaire has made enough profits and hence need not make more profits. This is against the spirit of the contract.
- **The issue of overburdened and understaffed judiciary and slow judicial system.**
 - According to 2016 data published by National Judicial Data Grid, two crore cases were pending in district courts in India, one-third of which were civil cases. At the time, analysts said that at the current rate of clearing, the district civil courts will never finish the backlog of cases.
- According to the Ease of Doing Business Index Report, enforcing a contract in India can take 1445 days and 30% of the claim value as cost.
- **Failure of alternative dispute redressal mechanisms:-**
 - Even arbitrations in India has been plagued by high costs and terrible delays, which keeps arbitration out of the reach of common citizen.
 - Big corporations prefer to take their arbitration to jurisdictions like Dubai and Singapore as in India for these reasons.

Impact due to low rank in contract enforcement:-

- Legitimate businesses will find it difficult to operate in environments where there is a lack of contract enforcement.
- Contract enforcement is very important for private enterprise.
- Poor contract enforcement tends to increase the risk and reduce the returns (increased legal costs) thus affecting the overall risk to return ratio.
- Another effect of a poor contract enforcement mechanisms is the spurt of informal and often illegal channels of dispute resolution.
- Along with biased and poor quality decisions, this also brings undue power into the hands of middlemen and facilitators.
- There is a huge uncertainty cost attached to doing business in India due to uncertain enforceability of contracts, and it makes Indian businesses globally less competitive.

Way forward:-

- Coordination across all departments and between the Centre, the States and local level to get the implementation right and fast.
- It is imperative to create awareness of the reforms introduced so that the enterprises can benefit from it.
- Devolution of powers to decentralise the system for faster decision-making.
- An effective legal system provides the necessary level playing ground for smaller firms.
- **Reforms in judiciary needed:-**
 - If enforceability problem is to be solved, sufficient number of judges must be recruited and vacancies in courts must be quickly filled.
 - Another major way to increase productivity of judges will be to introduce fully digital systems in the courts.
- **In major cities, commercial courts are being introduced at the level of district judges.**
 - This is likely to have a long term positive impact provided that judges in larger numbers are actually appointed in these courts rather than just giving additional duties to existing judges who are already overburdened with cases for optical purposes
- It is also important that individuals and businesses also make an effort to learn more about contracts and contract enforceability.
- Poor and costly registration system in India can be dealt with digital signatures and other technology such as blockchain.
- India therefore needs to bring in improvements in ease of starting a business and in contract enforcement to really make it easier for legitimate businesses to flourish in India and to generate jobs and bring in prosperity.



Topic– Inclusive growth and issues arising from it.

Q) In a milieu of impressive growth, India has developed some serious fractures that show no signs of cure. Analyze. (250 words)

[Indianexpress](#)

Why this question

The article discusses in detail about the most important social and economical problems faced by India, despite a sustained high growth rate.

Directive word

Analyze-here we have to examine methodically the structure or nature of the topic by separating it into component parts, and present them as a whole in a summary.

Key demand of the question.

The question wants us to dig deep into the current socio-economic reality of India and bring out the most important problems faced by India.

Structure of the answer

Introduction– write a few introductory lines about India’s economic progress since economic reforms.

Body- Discuss in paras the problems faced by India, which otherwise should have been resolved by economic growth. E.g

Female infanticide and low sex ratio in northern and western states of India.

Failure of education: In a rapidly digitising world, India is wholly unequipped to supply quality education.

Rise in income inequalities

Rise in regional disparities.

Discuss each heading briefly.

Conclusion– based on your discussion, form a fair and a balanced conclusion on the given issue.

Background:-

- India is now among the fastest-growing large economies of the world. Despite this some serious fractures have emerged and show no signs of healing.

Some of these fractures are :-

- Female foeticide and infanticide:-**
 - At 918 girls per 1,000 boys in 2011, India’s 0-6 sex ratio is among the poorest in the world. Haryana is the vilest state, with every district faring poorer than the poor all-India average.
 - Much of north India, western UP, Rajasthan, Gujarat, Maharashtra and the northern part of Madhya Pradesh rampantly engage in ultrasonography to detect and then illegally abort female foetuses.
 - Despite tough laws against sex-determination and female foeticide, there is no police action to speak of. For instance, during 2001-2015, Haryana registered only 139 police cases which is a very low in a state which is unparalleled in this crime.
- Failure of education:-**
 - According to the 2011 Census, 14 per cent of men aged 25-34 years hadn’t studied beyond class 10, 11.5 per cent hadn’t progressed beyond Class 12 and only 14.6 per cent were graduates. For women, these numbers were poorer
 - According to the Annual Status of Education Report for 2017, 25 per cent of rural students of 14-18 years could not read basic text fluently in their own language.
 - Education is considered as a mode of gaining marks and in turn employment rather than developing one’s personality and character
- Rising inequalities:-**
 - India doesn’t have good estimates of either wealth or income inequality.



- **Huge economic differences between regions of the country:-**
 - **BIMARU states are still lagging behind than other Indian states on the basis of literacy, education, urbanization and income.**
 - **Lack of involvement of local people in the planning process** of these states is another reason for its limited development.
- **Lack of healthcare:-**
 - India faces the double burden of infectious diseases and a dramatic rise in non-communicable diseases, now estimated to account for more than half of all deaths.
- **Sanitation:-**
 - Many health challenges are linked to sanitation. Linking a clean environment to human capital productivity is an issue that should be looked at as an investment and not a cost. The challenge is to identify and implement the right way to provide 1.2 billion Indians with a clean environment.
- **Neglecting environment:-**
 - More than one-third of Indians live in cities. It is estimated that, by 2050, as many as 900 million people will be living in urban centres. Meeting their needs while safeguarding the environment will require innovative models of urban development.
- **Poverty:-**
 - **The multidimensional poverty index** uses 10 indicators to measure poverty in three dimensions: education, health and living standards. In its 2018 update, India's MPI index in 2018 was 0.121, placing it 53rd out of 105 developing countries for which data was available.
- **Gender :-**
 - There is a need for India to closely examine the norms that allow violence and a broader pattern of gender discrimination to continue. The gender gap holds back economies all around the world. Any society that does not value women as much as men is not reaching its full potential.
- **Water scarcity:-**
 - India's large population places a severe strain on its natural resources, and most of its water sources are contaminated by sewage and agricultural run-off.
 - While progress has been made, gross disparities in access to safe water remain. The World Bank estimates that 21% of communicable diseases in India are related to unsafe water, and diarrhoea alone causes more than 1,600 deaths daily.

What needs to be done ?

- Need to tackle high fertility, government can work in a **Bangladesh family planning approach model with collaboration of united nation population group and NGOs.**
- Reduce poverty by a community approach by using the self help group formula.
- Government needs to take crude action against the female foeticide and abortion cases that affect these states.
- There is a need for effective implementation of government schemes in these states like aspirational districts initiative, Ayushman Bharat, Pradhan Mantri Fasal Bhima Yojana etc.
- Inclusive education is necessary with better outcomes .
- Sanitation needs to be strictly taken care of to avoid diseases.

Q) SDGs are often criticized for being wishful and unattainable. Evaluate whether India's experience with SDGs validate the above criticism ? (250 words)

Financial express

Why this question

The article discusses the priorities that require improvement of we wish to fulfill the SDGs and examines India's progress in achieving the goals. The topic can be prepared for it can serve as a filler material for several questions of paper 2 and 3.

Key demand of the question

The question expects us to bring out the criticism of SDGs. Having done that we need to evaluate the validity of those criticisms based on the results seen in India. Discuss whether even partial fulfillment of targets would help in addressing several pertinent issues. Discuss what must be fine to accelerate the fulfilment of targets under SDGs



Directive word

Evaluate – When you are asked to evaluate, you have to pass a sound judgement about the truth of the given statement in the question or the topic based on evidences. You have to appraise the worth of the statement in question. There is scope for forming a personal opinion here.

Structure of the answer

Introduction – Explain what SDGs are and the targets under SDG

Body – analyze the criticism of SDGs that they are wishful and unattainable because they have set impossible targets which are difficult to fulfill by 2030. Bring out that it does impact the policy priorities of the government as seen in India. Evaluate India's progress and the nature of steps taken in India to show that it leads to improvements in several issues related to poverty and hunger etc.

Conclusion – Support the idea of SDG by emphasizing on the paradigm shift that it has brought in and discuss the way forward.

Background:-

- Three years into the breakthrough the UN achieved in 2015 by adopting 17 Sustainable Development Goals (SDG), scientists have begun to find meaning and correlation of these goals with the 7 billion habitats of the planet. In all, 193 governments are committed to SDGs.

Why are SDG criticised as only wishful:-

- It is difficult to comprehend that, in just 12 years, poverty and hunger will be wiped out from the earth. It is equally wishful to think that there will be clean water and green energy available to all by 2030, the target year.
- It is daunting to expect education, health, equality and decent employment opportunities will be accessible to the entire world.
- The SDGs aim to continue the economic, social and environmental vision the MDGs first set out to achieve but the **proposed SDGs number 17 in total with 169 targets and an estimated 300 or so indicators.**
- With more goals and more complexity the SDGs will be easier to ignore. The MDGs had a very simple, concise and easy to communicate message.
- SDGs, in their current state, fail to provide guidance to countries on how to prioritise or implement the targets, despite past evidence that countries may require help with this.
- Many of the current targets also come across as political statements that would be difficult to convert to measurable targets.
- Indeed the degree to which the SDGs have considered strategic implementation is unclear.

However experience brushes aside the above criticism:-

- SDGs are more ambitious than their predecessors but they tackle issues such as poverty from several angles, urbanisation, infrastructure, climate change, for example. Poverty is the result of social and political structures that favour inequality, poor governance and transparency, thus we need more goals to tackle each aspect.

India's experience with SDG:-

- SDG's as part of Indian policy:-**
 - India set up a high-level steering committee by the Union Cabinet to review India's performance in SDG implementation confirms the resolve.
 - Reflecting the country's commitment to the SDG agenda at the highest levels of Government, the Indian Parliament organized several forums including the South Asian Speakers Summit in February 2017. These forums have focused on the elimination of poverty, gender equality, climate change and resource mobilization for SDGs.
 - Additionally, the Speaker's Research Initiative has been launched for providing SDG-related insights to Members of Parliament.
 - Special efforts have been made to invigorate the federal governance structure of the country through cooperative and competitive federalism. State Governments are playing a prominent role in advancing the national development agenda.
 - The responsibility for overseeing SDG implementation has been assigned to the National Institution for Transforming India (NITI Aayog), which is the premier policy think tank of the Government and is chaired by the Prime Minister of India. NITI Aayog has mapped the goals and targets to various nodal ministries as well as flagship programmes.
 - State Governments are also engaged in developing roadmaps for achieving the SDGs with several of them having already published their plans.



- Draft indicators for tracking the SDGs have been developed and placed in the public domain by the Ministry of Statistics and Programme Implementation for wider consultation.
- **Financial inclusion:-**
 - India can rightfully claim credit for unleashing of financial mainstreaming, direct transfer of benefits and mobile telecom through Jan-Dhan, Aadhaar and Mobile (JAM).
 - By leveraging PMJDY, Aadhaar (biometric identity system) and mobile telephony, the Government has disbursed a cumulative amount of INR 1.62 trillion (USD 25 billion) to 329 million beneficiaries through Direct Benefit Transfers. This has helped to significantly enhance the efficiency of Government programmes.
- **Energy:-**
 - The Global Trends in Renewable Energy Investment report of 2018 lauds India's record in investment. The big three (India, China, Brazil) account for over 45% of global finance.
- **Education:-**
 - India has also made significant strides in universalisation of primary education. Efforts are under way to improve learning, retention, skilling and providing decent employment opportunities.
 - India's primary concern remains around women, their safety, employment, respect and equality.
- **Climate change:-**
 - India's bold Nationally Determined Contributions (NDC), communicated to the Conference of the Parties (COP) of the UN Framework Convention on Climate Change, form a significant part of its SDG strategy. These include substantially reducing the emission intensity of GDP, tapping non-fossil fuel energy sources and creating additional carbon sink.
- **Poverty:-**
 - The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), the Pradhan Mantri Jeevan Jyoti Bima Yojana and Pradhan Mantri Suraksha Bima Yojana, initiatives like the Atal Pension Yojana and the National Social Assistance Programme help in reducing poverty
 -
 - For fulfilling the cooking fuel requirements of the population in an environmentally friendly manner, the Pradhan Mantri Ujjwala Yojana, launched in 2016
- **GOAL 2: END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE**
 - Programmes under the National Food Security Act cover more than 800 million people in the country. Other initiatives that contribute to this goal are the ICDS and the Mid-Day Meal Programme.
 - Moreover, a comprehensive plan is being implemented for doubling farmers' income by 2022. This includes expediting tenancy reforms, promoting crop diversification and expanding micro-irrigation (1.3 million ha covered during the last two years).
 - Another area in which considerable progress has been made is digitization of agricultural marketing. The electronic National Agricultural Marketing platform now covers 250 Mandis (agricultural markets) across the country.
 - A revamped crop insurance programme, the Pradhan Mantri Fasal Bima Yojana, has also been launched.
- **GOAL 3: ENSURE HEALTHY LIVES AND PROMOTE WELLBEING FOR ALL AT ALL AGES**
 - The National Health Policy, 2017, specifies targets for universalizing primary health care, reducing infant and under-5 mortality, preventing premature deaths due to non-communicable diseases as well as increasing Government expenditure on health.
- **GOAL 5: ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS**
 - Several important initiatives have been taken during the last few years for promoting gender equality. A flagship initiative is Beti Bachao Beti Padao
 - Additionally, a Maternity Benefit Programme has been launched for all pregnant and lactating mothers.
 - For raising the levels of female labour force participation, a number of initiatives are being implemented including Stand-up India and MGNREGA.
- **GOAL 9: BUILD RESILIENT INFRASTRUCTURE, PROMOTE INCLUSIVE AND SUSTAINABLE INDUSTRIALIZATION AND FOSTER INNOVATION**
 - All forms of transportation roads, railways, civil aviation and waterways are being rapidly expanded.
 - Another priority area is manufacturing. The new Manufacturing Policy raises the output target from 16% of GDP to 25% by 2025.
 - India is developing into a high-tech and global manufacturing hub because of the emphasis on 'Make in India' and a substantial increase in FDI inflows.



- The Government has also introduced a number of policy measures for boosting employment-intensive manufacturing segments. For instance, the recently introduced Pradhan Mantri MUDRA Yojana
- For promoting entrepreneurship and enhancing economic growth, the Government has launched the Start-up India programme
- **GOAL 14: CONSERVE AND SUSTAINABLY USE THE OCEANS, SEAS AND MARINE RESOURCES**
 - Significant progress has been made with respect to preservation and management of the marine ecosystem. For instance, the Coastal Ocean Monitoring and Prediction System tracks the levels of marine pollution along the coastline.
 - Further, the Sagarmala programme is focused on improving port connectivity, port-linked industrialization and coastal community development. Under this initiative, support is also provided for the development of deep sea fishing vessels and fish processing centres.
- **GOAL 17: REVITALIZE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT:-**
 - For increasing the domestic mobilization of resources, a path-breaking tax reform agenda is being finalized. This includes direct tax reforms as well as the GST, a uniform and simplified form of indirect taxation. An innovative tax like the Swachh Bharat Cess (Clean India Cess) has also been levied for mobilizing resources for the Clean India Campaign.
 - Further, consistent policies have opened up the economy to FDI.

Issues that need to be dealt with by India:-

- India still leads in malnutrition, hunger, stunting etc
- Out of pocket expenditure is still very high
- Quality of education and education system in general is criticised
- Gender equality is still a dream especially when patriarchal mindset dominates the society .
- India consists of cities which are some of the most highly polluted
- Formal sector in India employs very few and majority are in unorganised sector with no protection.

Q) Discuss the problems faced by small towns in India. Do you think they have gained enough attention from various urban development programmes. Comment. (250 words)

[Indian express](#)

Why this question

While various urban development programmes have been launched across the country, Indian towns in which about one-fourth of Indian population resides have not been able to develop at par with big cities. The article discusses the economic dilemma and problems faced by such towns and their importance in various urban development programmes.

Directive word

Discuss- this is an all-encompassing directive which mandates us to write in detail about the key demand of the question. we also have to discuss about the related and important aspects of the question in order to bring out a complete picture of the issue in hand.

Comment- here we have to express our knowledge and understanding of the issue and form an overall opinion thereupon.

Key demand of the question.

The question wants us to write in detail about the problems faced by small Indian towns. It then wants us to express our opinion as to what extent have the various urban development programmes helped the small towns of India.

Structure of the answer

Introduction– write a few introductory lines about the Indian population living in small towns. E.g One-fourth of the urban population lives in small towns (20,000 to 1,00,000 population).

Body-

Discuss the problems faced such small towns. E.g Small towns in India are something of an oxymoron. They are far removed from cities in character and appearance and are constantly struggling to establish. Every small town in India has its unique story and significance but their



problems are similar — lack of basic services, dilapidated infrastructure, overcrowded spaces and dwindling job opportunities. They have private schools and clinics, a variety of fast-food eateries, modern tailoring shops and mobile and electronic stores. Such entrepreneurial energy says something about the growing small-town population which desires better services and an improved quality of life. But this is relatively unrecognised by the government.

Discuss the various urban development programmes and their contribution towards development of small towns in India. E.g The UPA government's urban development programme, the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), covered both big cities and small towns but gave financial preference to the former. JNNURM was replaced by the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) that focuses on infrastructural development for Class I cities (those with a population of one lakh and above). The Smart Cities Mission (SCM) was launched to address our growing fascination with world-class cities that use technology to improve their services etc.

Conclusion— based on your discussion, form a fair and a balanced conclusion on the given issue.

Background:-

- Small towns in India are in a desperate need for better infrastructure which can boost the local economy and help improve the quality of life.
- In India one-fourth of the urban population lives in the small towns (20,000 to 1,00,000 population). These 7 crore people need amenities to match up to their “urban” status.

Problems faced by small towns:-

- **Lack of basic services, dilapidated infrastructure, overcrowded spaces and dwindling job opportunities.**
- **Waste management:-**
 - This is a key infrastructure required to improve sanitation and prevent outbreak of diseases. At present, wastes from households are mostly disposed in city outskirts by municipalities.
 - Also, drainage facilities are a major problem with most towns getting flooded during the monsoons.
- **Education:-**
 - Many small towns lack basic educational infrastructure. Most schools don't have proper toilets, electricity, and proper buildings with roofs. There is also lack of drinking water.
- **Healthcare:-**
 - According to a study, rural public health facilities have a hard time ensuring a regular presence of medical professionals, trained doctors and pharmacists.
 - In addition, there is a high level of absenteeism of those already employed.
- **Telecom:-**
 - India is nowhere close to China and USA in terms of network connectivity because of low penetration in rural areas due to lack of telecom infrastructure.
- **Water supply:-**
 - There is inadequate piped water supply across small towns and the houses that receive water are mostly untreated.

Urban development programmes failed to deal with the issues of small towns :-

- **Focus on large cities:-**
 - The Jawaharlal Nehru National Urban Renewal Mission (JNNURM), covered both big cities and small towns **but gave financial preference to the former.**
 - JNNURM was replaced by the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) that focusses on infrastructural development for Class I cities (those with a population of one lakh and above).
 - The Smart Cities Mission (SCM) was launched to address our growing fascination with world-class cities that use technology to improve their services.
 - The common thread between these urban schemes is that they cater to Class I cities, which already have better access to services.
 - Though they are small in size, many of these small towns have an enormous growth potential. Yet, **mega cities continue to be seen as engines of economic growth** and attract large sums of central investments just to sustain the weight of their population.
- **Policy failure:-**
 - Many studies have shown that the benefits of small town development can spill over to villages, especially in terms of employment generation. Others have talked about the need for a well-spread network of cities to counter the problems of migration. But this discourse hasn't translated into policy.



- Programmes on MNREGA focused on rural areas so small towns have been largely ignored.
- **Roads:-**
 - The government has allocated thousands of crores for building a strong transport network that can link different cities and small towns with regional hubs.
 - However, several projects across the country have seen slow progress over the years severely impacting the economic progress of the small towns.
- They have private schools and clinics, a variety of fast-food eateries, modern tailoring shops and mobile and electronic stores. Such entrepreneurial energy says something about the growing small-town population which desires better services and an improved quality of life. **But this is relatively unrecognised by the government.**

Way forward:-

- Development of small towns can make these urban centres **fulfill the long-standing demand for a link between rural India and the country's big cities and towns.** The growing population in these small towns needs to be backed by **adequate investments by the Centre.**
- There should be a key role for these urban centres in development planning.
- There is an urgent need to set up recycling facilities as a lot of times the waste often ends up in rivers polluting them.

Topic: Issues related to direct and indirect farm subsidies and minimum support prices; Public Distribution System- objectives, functioning, limitations, revamping; issues of buffer stocks and food security; Technology missions; economics of animal-rearing.

Q) Livestock sector in India has an important role to play in enhancing the level of inclusive growth in the country. Discuss. (250 words)

Key demand of the question

The question expects us to bring out the immense role that livestock sector can play in the economic growth in India, and in particular in achieving inclusive growth. We also need to highlight the challenges and the steps that have been taken to overcome them. In conclusion we need to give our opinion on whether focussing on livestock sector can help achieve inclusive growth.

Directive word

Discuss – This is an all-encompassing directive – you have to debate on paper by going through the details of the issues concerned by examining each one of them. You have to give reasons for both for and against arguments.

Structure of the answer

Introduction – *Explain the problem of lack of inclusive growth and suggest that livestock sector might have a solution.*

Body

Discuss the economic advantages of livestock sector

- *Plays an important role in Indian economy, about 2.5-3 cr people depend on it for food*
- *Provides employment*
- *Contributes to income or small farm households etc*

Discuss specifically with explanations as to how it can aid in inclusive growth

- *Distribution of livestock is more equitable than that of land*
- *Livestock sector contributes a lot to income or small farm households*
- *More than three-fourth of the labour demand in livestock production is met by women. The share of women employment in livestock sector is around 90% in Punjab and Haryana where dairying is a prominent activity and animals are stallfed*

Discuss the challenges that lie ahead and the steps taken by government to address those challenges and take the sector forward



Conclusion – Give your view on whether this sector has the potential to bring inclusive growth.

Background :-

- India's livestock sector is one of the largest in the world. Livestock sector plays an important role in Indian economy. Livestock provides livelihood to two-thirds of rural community.

Livestock sector in India has an important role to play in enhancing the level of inclusive growth in the country :-

- Income :-**
 - Livestock is a source of subsidiary income for many families in India especially the poor.
 - Animals provide nutrient-rich food products, draught power, dung as organic manure and domestic fuel, hides & skin, and are a regular source of cash income for rural households.
 - They are a natural capital, which can be easily reproduced to act as a living bank with offspring as interest, and an insurance against income shocks of crop failure and natural calamities.
- Employment :-**
 - A large number of people in India being less literate and unskilled depend upon agriculture for their livelihoods. But agriculture being seasonal in nature could provide employment for a maximum of 180 days in a year. **The land less and less land people depend upon livestock for utilizing their labour during lean agricultural season.**
- Gender equity :-**
 - Animal husbandry promotes gender equity. More than three-fourth of the labour demand in livestock production is met by women. The share of women employment in livestock sector is around 90% in Punjab and Haryana where dairying is a prominent activity and animals are stall-fed.
- Food :-**
 - The livestock products such as milk, meat and eggs are an important source of animal protein to the members of the livestock owners.
- Social security:**
 - The animals offer social security to the owners in terms of their status in the society. The families especially the landless which own animals are better placed than those who do not.
 - Animals are used for various socio religious functions.**
- Draft:**
 - The bullocks are the back bone of Indian agriculture. The farmers especially the marginal and small depend upon bullocks for ploughing, carting and transport of both inputs and outputs
- Dung:**
 - In rural areas dung is used for several purposes which include fuel (dung cakes), fertilizer (farm yard manure), and plastering material (poor man's cement).

Challenges faced by Livestock sector in India:-

- Productivity :-**
 - Improving productivity of farm animals is one of the major challenges. The average annual milk yield of Indian cattle is 1172 kg which is only about 50% of the global average.
- Diseases :-**
 - The Frequent outbreaks of diseases like Food and Mouth Diseases, Black Quarter infection, Influenza etc. continue to affect Livestock health and lowers the productivity.
- Environment :-**
 - India's huge population of ruminants contributes to greenhouse gases emission adding to global warming. Reducing greenhouse gases through mitigation and adaptation strategies will be a major challenge.
- Crossbreeding** of indigenous species with exotic stocks to enhance genetic potential of different species has been successful only to a limited extent.
- Limited Artificial Insemination services owing to a deficiency in quality germplasm**, infrastructure and technical manpower coupled with poor conception rate following artificial insemination have been the major impediments.
- Livestock sector did not receive the policy and financial attention it deserved.** The sector received only about 12% of the total public expenditure on agriculture and allied sectors, which is disproportionately lesser than its contribution to agricultural GDP.
- The sector has been neglected by the financial institutions.**
 - The share of livestock in the total agricultural credit has hardly ever exceeded 4% in the total (short-term, medium-term and long-term). The institutional mechanisms to protect animals against risk are not strong enough.



- **Insurance:-**
 - Currently, only 6% of the animal heads (excluding poultry) are provided insurance cover. Livestock extension has remained grossly neglected in the past.
 - Only about 5% of the farm households in India access information on livestock technology. These indicate an apathetic outreach of the financial and information delivery systems.
- **Livestock derives a major part of their energy requirement from agricultural byproducts and residues.** Hardly 5% of the cropped area is utilized to grow fodder. **India is deficit in dry fodder by 11%**, green fodder by 35% and concentrates feed by 28%. The common grazing lands too have been deteriorating quantitatively and qualitatively.
- **Lack of access to markets may act as a disincentive to farmers to adopt improved technologies and quality inputs.**
 - Except for poultry products and to some extent for milk, markets for livestock and livestock products are underdeveloped, irregular, uncertain and lack transparency. Further, these are often dominated by informal market intermediaries who exploit the producers.
- **Likewise, slaughtering facilities are too inadequate.** About half of the total meat production comes from un-registered, make-shift slaughterhouses. Marketing and transaction costs of livestock products are high taking 15-20% of the sale price.

Way forward:-

- The **following issues need to be tackled :-**
 - Inadequate availability of credit.
 - Poor accesses to organized markets deprive farmers of proper milk price.
 - Limited availability of quality breeding bulls.
 - Deficiency of vaccines and vaccination set-up.
 - Due to industrialization and Urbanization Majority of grazing lands are either degraded or encroached.
 - Diversion of feed and fodder ingredients for industrial use.

Q) The pursuit of creating surplus milk and dumping it across the globe has not only created livelihood crisis for millions of farmers but is also hurting the ecology. Analyze. (250 words)

Reference

Why this question

India is the largest producer of milk which provides livelihood to millions of small dairy farmers. Globally milk prices have slumped and caused distress in the dairy industry. In this context it is important to analyze the reasons behind the same and how it impacts livelihoods and the ecology.

Key demand of the question.

The question wants us to dig deep into the issue and bring out the reasons behind the dairy distress witnessed globally, including India and also discuss how it has impacted the ecology of the regions.

Structure of the answer

Introduction– write a few introductory lines about the slump in milk prices witnessed globally, including India.

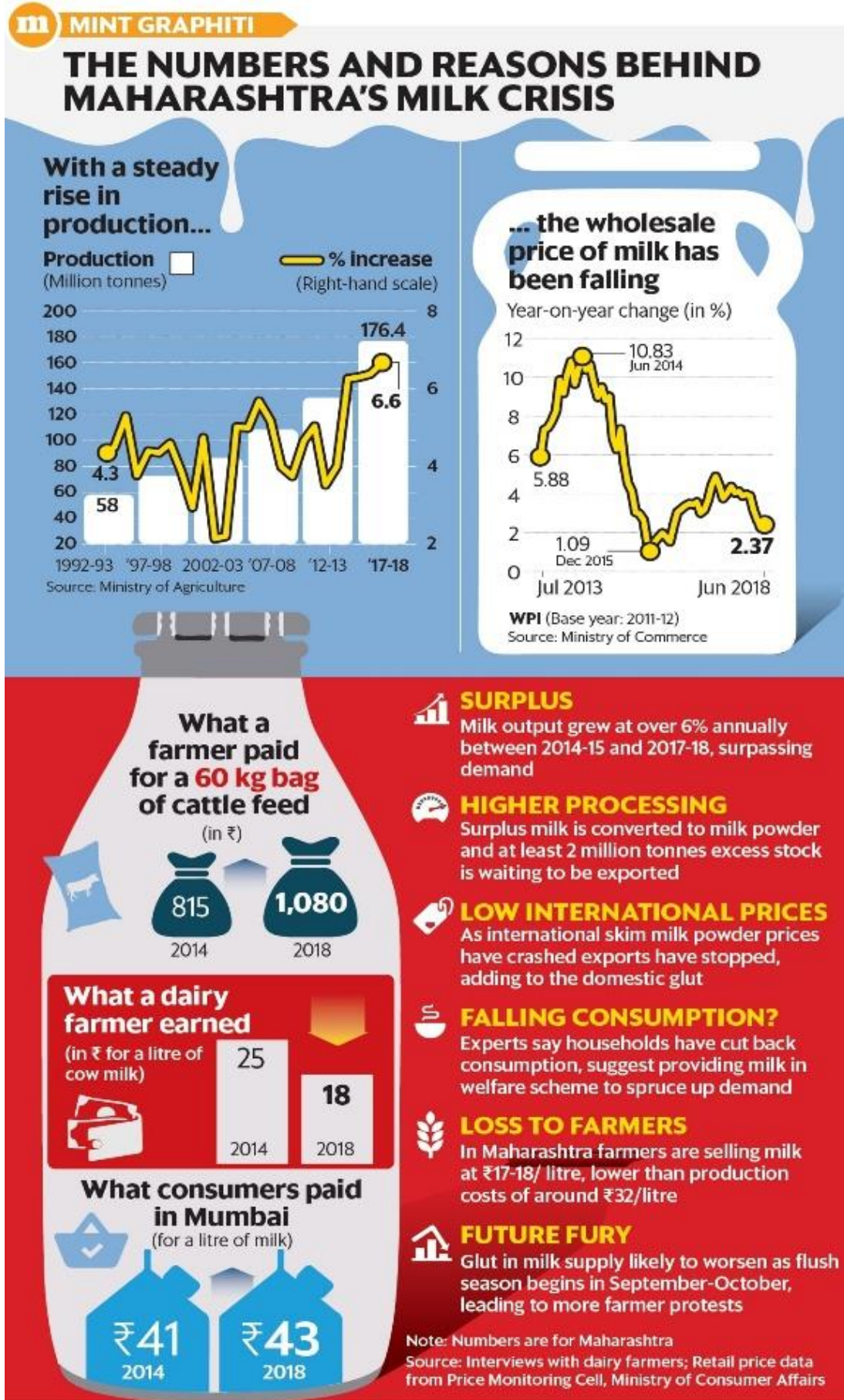
Body-

Discuss how the pursuit of creating surplus milk and dumping it across the globe has created livelihood crisis for small farmers globally. E.g mention the abolition of quota system by the EU; mention the Russian sanctions on EU milk; In such a scenario, dairy multinationals are ramping up investments in new economies. Their rush is destabilising local dairy sectors in Africa and Asia and pushing small farmers to the brink of despair; This milk rush is ratcheting up long-standing accusations that poor countries pay the price for EU farm policies crafted in Brussels; To further compete with farmers who supply fresh milk, these multinationals have set up plants where they reconstitute SMP, at times by adding some herbs, and sell those as “quality” milk; As India has not opened up its market to foreign MNCs, the later started exporting cheap dairy products to those Asian and African countries where India had a stronghold. Since 2015, India lost its largest export market of Bangladesh, Egypt, Algeria, the UAE, Yemen, Saudi Arabia and Pakistan to the EU etc.



Discuss the ecological impacts of such practices. E.g discuss the welfare concerns of the dairy cows in the wake of industrialized production.

Conclusion– based on your discussion, form a fair and a balanced conclusion on the given issue.





Background :-

- Dairy farmers across the world are crying for help as global milk prices slump.
- In India, the biggest producer of milk in the world, aggrieved farmers took to the streets in June and August after wholesale prices of cow milk collapsed to below the cost of bottled water in several states.
- India's milk production has grown at 6.3 per cent a year during 2014-18, surpassing demand for packaged milk. **But the global price of SMP too has fallen creating a glut and price drop in domestic market.**

Reasons why surplus is produced yet prices are glut and how it is affecting farmers :-

- Despite an increase in production, milk farmers are suffering because of a sharp decline in prices at which they sell milk to dairies. The **reason is rising stock of skimmed milk powders (SMP) at dairies.** India's dairy sector has suffered from a SMP glut in the last 3-4 years.
- **Global crash took place because of three factors:-**
 - First, protein concentrate consignments exported to China from New Zealand's Fonterra had tested positive for Clostridium botulinum bacteria in 2013.
 - Second, in 2014, reacting to sanctions following tensions in Ukraine, Russia had embargoed import of western foods.
 - Third, in 2015, a three-decade-old milk production quota regime was demolished by the European Union.
- **Diary multinationals :-**
 - Exploiting this rock-bottom price in major milk production zones like the EU, the US, Australia and New Zealand, dairy multinationals are ramping up investments in new economies. **Their rush is destabilising local dairy sectors and pushing even more farmers to the brink of despair.**
 - Since the new free trade agreements under WTO are yet to be in force, the older one, the so-called economic partnership with African countries, is helping these transnationals dump cheap produce on emerging economies.
 - These multinationals have set up plants where they reconstitute SMP, at times by adding some herbs, and sell those as "quality" milk.
 - As India has not opened up its market to foreign MNCs, the later started exporting cheap dairy products to those Asian and African countries where India had a stronghold.
- **Russia:-**
 - Russia imposed an embargo on European dairy products in retaliation for sanctions that followed 2014 annexation of Ukraine's Crimean Peninsula.
- **Supermarkets engaged in retail are creating pressure to keep milk prices low** while rates of dairy products have skyrocketed.

Ecological impact:-

- **Cows are treated as machines:-**
- Fifteen years ago, cows in Europe produced 2,000 litres in a single lactation period. Today they yield over 10,000 litres. **This has been achieved through unsustainable milking mechanisms.**
- To achieve industrial-scale production, big farms rear high milk-yielding breeds and feed them cheap soyabeans and artificial fodder from Latin America. **Cows are induced with so much milk that they cannot walk.**
- Calves get separated from their mother immediately after birth and **all the milk it can produce in the entire life span is extracted in two years.**

Way forward:-

- It's time governments raised welfare standards of cattle. This will stop over-production of milk, create scarcity and reverse the demand-supply trend.
- There is also an urgent need to re-establish local market where farmers can directly sell to consumers.
- Small milk producers need to organise themselves into non-centralised and localised collectives that link directly to consumers. This will help them to stay away from an extremely volatile and vulnerable global system of commodity production.

Q) Blue Revolution aims at doubling the income of farmers in India but it faces several challenges. Discuss. Also Discuss the steps taken by the government in this direction in recent years. (250 words)

[PIB](#)

[Reference](#)

[Pib](#)

[Pib](#)

www.insightsonindia.com



Why this question

The Blue Revolution envisages transformation of the fisheries sector with increased investment, better training and development of infrastructure. It is an important part of the efforts of the govt. To double the farmers' income by 2022. It is important to discuss the efforts of the govt in this regard and the challenges faced thereto.

Directive word

Discuss- this is an all-encompassing directive which mandates us to write in detail about the key demand of the question. we also have to discuss about the related and important aspects of the question in order to bring out a complete picture of the issue in hand.

Key demand of the question.

The question wants us to write in detail about the challenges in the way of realizing a blue revolution in India. It also wants us to write in detail about the steps taken by the government in this direction in recent years.

Structure of the answer

Introduction– *write a few introductory lines about the size and potential of India's aquaculture industry. E.g India has large natural resources, and water bodies such as reservoirs, lakes and ponds, in addition to an 8,118km-long coastline. So it is well positioned to have a Blue Revolution. Blue Revolution will focus on construction of new fishing harbours, modernization of fishing boats, imparting training to fishermen, and above all promote fishing as a self-employment activity.*

Body-

Discuss the challenges faced by the sector. E.g resource quality issues; socio-economic issues around the resources; and techno-managerial issues connected with the production of fish; The resource quality issues pertain mainly to the length of time for which adequate water would be standing in a waterbody, alternate demands on the same waterbody and water quality problems resulting from these alternate demands; Socio-economic issues pertain to usufruct rights over the waterbodies; security and length of tenancy when these are leased; and poaching of fish; Techno-managerial issues pertain to the availability of spawn, seedlings and fingerlings on time, availability of necessary feed and medicines, access to markets and working capital etc

Discuss the steps taken by the govt. E.g Realizing the immense scope for development of fisheries and aquaculture, the Government of India has restructured the Central Plan Scheme under an umbrella of Blue Revolution. The restructured Central Sector Scheme on Blue Revolution: Integrated Development and Management of Fisheries (CSS) approved by the Government provides for a focused development and management of the fisheries sector to increase both fish production and fish productivity from aquaculture and fisheries resources of the inland and marine fisheries sector including deep sea fishing; To give boost to the sector in recent years. E.g the present government released Rs. 64.32 crore during 2014-15 to 2018-19 as compared to Rs. 4.95 crore given during 2009-10 to 2013-14. Apart from this, as part of Prime Minister special package to Bihar, the fisheries sector was sanctioned Rs 279.55 crore under which the first installment of Centre's share of Rs. 40.79 crore has been released. It has been targeted to enhance the fish production from 107.95 lakh tonnes in 2015-16 to about 150 lakh tonnes by the end of the financial year 2019-20. It is also expected to augment the export earnings with a focus on increased benefit flow to the fishers and fish farmers to attain the target of doubling their income.

Conclusion– *based on your discussion, form a fair and a balanced conclusion on the given issue.*

Background :-

- India is the second largest fish producing country in the world with production of 11.41 million metric tonnes in 2016-17. Indian fisheries is one of the most comprehensive and representative fisheries globally, with both marine and inland fisheries, warm and cold water fisheries. It significantly contributes to the socio-economic growth of the country.



Blue revolution :-

- Blue Revolution envisages transformation of the fisheries sector with increased investment, better training and development of infrastructure.
- Blue Revolution will focus on construction of new fishing harbours, modernization of fishing boats, imparting training to fishermen, and above all promote fishing as a self-employment activity.
- The Government of India has restructured the Central Plan Scheme under an umbrella of Blue Revolution.
- **The restructured Central Sector Scheme on Blue Revolution: Integrated Development and Management of Fisheries (CSS)** approved by the Government provides for a focused development and management of the fisheries sector to increase both fish production and fish productivity from aquaculture and fisheries resources of the inland and marine fisheries sector including deep sea fishing.
- The scheme has the following components:
 - National Fisheries Development Board (NFDB) and its activities.
 - Development of Inland Fisheries and Aquaculture.
 - Development of Marine Fisheries, Infrastructure and Post-Harvest Operations.
 - Strengthening of Database & Geographical Information System of the Fisheries Sector.
 - Institutional Arrangement for Fisheries Sector.
 - Monitoring, Control and Surveillance (MCS) and other need-based Interventions.
 - National Scheme on Welfare of Fishermen.
- Blue Revolution is being implemented to achieve economic prosperity of fishermen and fish farmers and to contribute towards food and nutritional security through optimum utilization of water resources for fisheries development in a sustainable manner, keeping in view the bio-security and environmental concerns.

Challenges faced by blue revolution :-

- **Resource quality issues**
 - The resource quality issues pertain mainly to the length of time for which adequate water would be standing in a waterbody, alternate demands on the same waterbody and water quality problems resulting from these alternate demands.
 - **Stagnation of production of marine fisheries.**
 - Multiple-use waterbodies are unreliable for fish production unless managed well.
 - Lack of cold storage facilities thus fish need to be stored using formalin causing health problems
 - Lack of motorized boats.
- **Socio-economic issues around the resources**
 - Deep sea fishing would require large investments
 - Socioeconomic issues pertain to usufruct rights over the waterbodies
 - Security and length of tenancy when these are leased
 - Poaching of fish.
 - Guidelines in most states require these governing bodies to allot the fishing rights to the dead or fictitious co-operatives of the fishermen communities. In most places, such co-operatives are poorly managed.
- **Techno-managerial issues** connected with the production of fish.
 - Techno-managerial issues pertain to the availability of spawn, seedlings and fingerlings on time, availability of necessary feed and medicines, access to markets and working capital.
- There is **an imbalance between the number of hatcheries capable of giving quality seedlings and the area in which these may be grown.**
- Like most other forms of farm activities people are used to treating fisheries too as near zero input enterprises. **As such, efficient markets for the supply of inputs such as feed have not come up.**

Steps taken by government :-

- **National Fisheries Action Plan-2020(NFAP) for the next 5 years** with an aim of enhancing fish production and productivity and to achieve the concept of Blue Revolution.
- **Government has approved Rs 7522 crore Fisheries and Aquaculture Infrastructure Development Fund (FIDF).**
 - This fund will create employment opportunities to over 9.40 lakhs fishers/ fishermen/ fisher folks and other entrepreneurs in fishing and allied activities and attract private investment in creation and management of fisheries infrastructure facilities.
- **Gujarat shifted from an insistence on cooperatives as lessees of ponds and tanks to a public auction and changed the tenure of lease from a single year to several years.**
 - This created a huge incentive to the entrepreneurs. This alone increased the production manifold since private entrepreneurs found a way to strengthen the ponds, to replenish water when it started drying up,



to manage the demands for alternate uses by making suitable arrangements that would not damage fish, and to spend money for protection against poachers.

- As part of Prime Minister special package to Bihar, the fisheries sector was sanctioned Rs 279.55 crore under which the first installment of Centre's share of Rs. 40.79 crore has been released
- **PPP:-**
 - With a view to realize the full potentials of Indian fisheries through coordination of different agencies and public-private partnerships and thereby tap the untapped potential in fisheries and aquaculture, and for improving the nutritional security, livelihoods as also women empowerment, **the National Fisheries Development Board (NFDB) launched the Web Portal Mera Matsya Dhan (MMD)**..
 - The Mera Matsya Dhan Web Portal is user friendly and can be accessed to submit on-line proposal for financial assistance by individuals, fishermen societies, fisherwomen SHGs, NGOs, etc., from anywhere in the country through the District Fisheries Officer of the respective State Govt.

Conclusion:-

- The onus is not only on the supply side, but also demand, where the consumers too should be accountable for the fish they purchase and know how it is sourced.
- Information dissemination and knowledge transfer is key to move towards a sustainable fishing industry and for conservation of aquatic life.

Topic – Food processing and related industries in India- scope and significance, location, upstream and downstream requirements, supply chain management.

Q) The Food Processing Industry in India suffers from long and fragmented supply chain. Can contract farming provide plausible solution to this problem? Discuss. (250 words)

Key demand of the question

The question expects us to bring out the issue faced by food processing industry on account of inefficiencies in its supply chain. Thereafter, we need to discuss how contract farming can help in issues related to supply chain and help the food processing industry grow.

Directive word

Discuss – This is an all-encompassing directive – you have to debate on paper by going through the details of the issues concerned by examining each one of them. You have to give reasons for both for and against arguments.

Structure of the answer

Introduction – Explain the status of food processing industry in India

Body

Discuss the issues related to supply chain and the lack of forward and backward linkages. Explain the problems that it causes for the food processing industry.

- *Explain what contract farming is – Contract farming can be defined as agricultural production carried out according to an agreement between a buyer and farmer thus establishing conditions for the production and marketing of farm products.*

Discuss contract farming can help resolve the inefficiencies of food processing industries

- *Assured Supply resulting in a better control over the factors of production.*
- *The contract farming can aid the food process industry to encourage, incentivise and support farmers to enhance the quality of the crops. Thus assuring an enhanced quality of the input*
- *Elimination of canalisation and cartelisation due to APMC act will aid in decreasing the cost of raw materials etc*

Conclusion – Highlight what needs to be done and how contract farming can be promoted.

Background :-

- With a population of more than one billion individuals and food constituting a major part of the consumer's budget, food processing sector has a prominence next to no other businesses in the country.



Issues food processing industry is facing :-

- **Supply chain issues:**
 - high cost of raw material (driven by low productivity and poor agronomic practices)
 - Presence of intermediaries and APMC acts make it more complicated.
 - high cost of packaging, finance, transport and distribution
 - lack of organized retail
- **Logistics cost:**
 - Logistics cost is high for transportation, warehousing, material handling etc.
 - In India, Logistics accounts for about 13% of GDP, which translates to over USD130 billion.
 - This cost is significantly higher as compared most developed countries.
- **Economic issues:**
 - In India, the food processing industry is highly fragmented and is dominated by the unorganized sector
 - **Inadequate infrastructure:**
 - The inadequate support infrastructure which is the biggest bottleneck in expanding the food processing sector, in terms of both investment and exports includes:
 - long and fragmented supply chain
 - inadequate cold storage and warehousing facilities
 - Inadequate road, rail and port infrastructure.
 - lack of modern logistics infrastructure such as logistics parks, integrated cold chain solutions, last mile connectivity,
 - **Political issues:**
 - Absence of Comprehensive national level policy on food processing sector: The food processing sector is governed by statutes rather than a single comprehensive policy on food processing. India urgently needs a national food processing policy which incorporates tax breaks for the sector.

Food Processing Sector– Impediments



Contract farming:

- Contract farming in India has huge investment opportunities for global super-market chains considering India as a major outsourcing hub.
- The contract farming allows buyers and sellers to transact without routing through mandis.
- Under contract farming, farmers can be given seeds, credit, fertilizers, machinery and technical advice so that their produce is tailor made for the requirements of the companies.



- There would be no middlemen involved and farmers would get a predetermined sale price from the companies.
- The farmer does not have to make trips to the mandis nor worry about getting seeds and credit for farming operations.
- By entering into a contract, the farmer reduces the risk of fluctuating market demand and prices for his produce and the companies reduce the risk of non-availability of raw materials.
- Contract farming can fill the gap of lack of investment and land improvement by supplying quality inputs, giving technical guidance and management skills.

How contract farming can help supply chain issue in food processing sector :-

- Contract farming can emerge as a significant opportunity for companies whereby they can create direct farm linkages to source appropriate quality, quantity and varieties of inputs.
- The farmers get the high remunerative price for their farm product.
- The farm grower benefit from the agro extension program of the agro processor.
- The wastage of the farm produces now between 35 and 40 percent largely eliminated as the farm processing factory situated next to cluster of farms.
- It promotes best agri practices from different parts of the worlds.
- It will free farmer from middlemen and money lenders.
- Farmers income security through guaranteed price and access to quality inputs.
- Encourages new generation to take farming as new business venture instead of migrating to cities for search of jobs.
- Assured Supply resulting in a better control over the factors of production.
- The contract farming can aid the food process industry to encourage, incentivise and support farmers to enhance the quality of the crops. Thus assuring an enhanced quality of the input
- Elimination of canalisation and cartelisation due to APMC act will aid in decreasing the cost of raw materials etc.

Problems related with Contract farming in India:

- Very small and marginal farmers may not be roped in for this form of farming because companies may want a particular size of the crop which small farmers with their small parcels of land may not be able to produce.
- The medium size farmer may not be literate enough to understand the nitty gritty of the contract and all the clauses.
- **The farmer may be forced to produce only tomatoes or onions year after year which will lead to monoculture** and he will have no options left to produce whatever mix of crops which he may think is good for his farm.
- **Predetermined prices do not take care of food inflation** and in case there is a price rise of the product, the farmer cannot take advantage and make a windfall profit because he is under contract to sell at the price agreed upon beforehand.

Way forward :-

- The Niti Ayog thinks a model law is needed to streamline the contract farming system and make it more uniform across the States.
 - Presently, contract farming has been co-opted by 22 States but there is no uniformity or homogeneity regarding the kinds of produce that can come under it and the conditions under which contract farming should be allowed.
- **To make contract farming inclusive, farming groups like cooperatives should be encouraged.**
- The idea of a model Act is to vertically integrate farmers producing fruits and vegetables with agro processing units for better price realization and post-harvest losses

Q) Discuss the steps taken by the Indian government to attract domestic and foreign investment in food processing industry in India. (250 words)

pib

Directive word

Discuss- this is an all-encompassing directive which mandates us to write in detail about the key demand of the question. we also have to discuss about the related and important aspects of the question in order to bring out a complete picture of the issue in hand.



Key demand of the question.

The question wants us to write in detail about the initiatives and steps taken by the Indian government in order to attract investment in food processing sector of India.

Structure of the answer

Introduction- *write a few introductory lines about the importance of food processing industry in value addition and in improving the income of Indian farmers etc.*

Body-

Discuss in points/ paragraphs about the recent initiatives taken by the government to attract investment in food processing industry in India. E.g

Discuss about the investors portal, Nivesh Bandhu.

Discuss about Pradhan Mantri Kisan SAMPADA Yojana.

Food and agro-based processing unit and cold chain infrastructure have been classified under agriculture activities for Priority Sector Lending.

Service Tax on pre-conditioning, pre-coding, ripening, waxing, retail packaging and labelling of fruits and vegetables exempted in cold chain projects etc.

Conclusion– *based on your discussion, form a fair and a balanced conclusion on the given issue.*

Background:-

- With a population of more than one billion individuals and food constituting a major part of the consumer's budget, food processing sector has a prominence next to no other businesses in the country.
- **India is showcased as the preferred investment destination in Food Processing sector at WFI 2017 and it attracts investment intent of about USD 13.56 billion from Domestic and foreign investors.**

Steps taken by India:-

1. Kisan Sampada Yojana:

- Government of India has approved a new Central Sector Scheme for the period upto 2019-20 to be implemented by Ministry of Food Processing Industries (MoFPI).
- Kisan Sampada Yojana is an umbrella scheme with the following components:
 - Mega Food Parks
 - Integrated Cold Chain and Value Addition Infrastructure
 - Creation / Expansion of Food Processing & Preservation Capacities
 - Infrastructure for Agro-processing Clusters
 - Creation of Backward and Forward Linkages:
 - The objective of the scheme is to provide effective and seamless backward and forward integration for processed food industry by plugging the gaps in supply chain in terms of availability of raw material and linkages with the market.
 - The scheme will enable linking of farmers to processors and the market thereby ensuring remunerative prices for their produce.
 - Food Safety and Quality Assurance Infrastructure
 - Human Resources and Institutions
- PM Kisan Sampada Yojana is a comprehensive package which will result in 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 process 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 the processed foods.

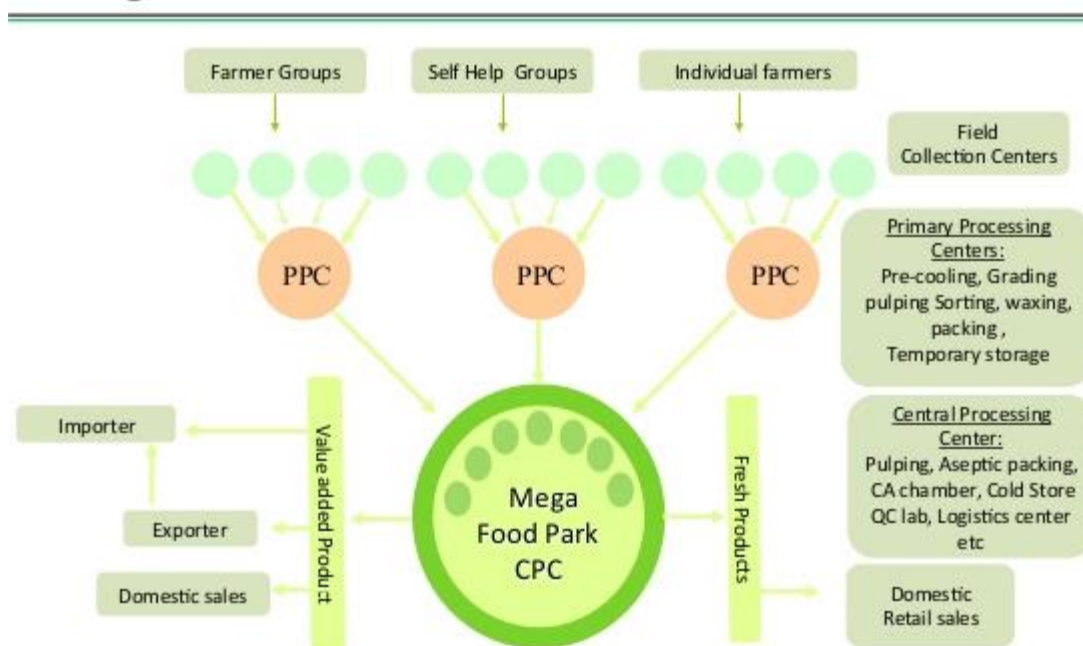
2. Mega Food Parks

- Launched by the Ministry of Food Processing Industries was developed under the 11th Five Year Plan and was implemented in 2008 by the then UPA government.
- **Aim:**
 - The Scheme of Mega Food Park aims at providing a mechanism to link agricultural production to the market by bringing together farmers, processors and retailers so as to ensure maximizing value addition, minimizing wastage, increasing farmers' income and creating employment opportunities particularly in rural sector.



- The Mega Food Park Scheme is based on “Cluster” approach and envisages creation of state of art support infrastructure in a well-defined agri/ horticultural zone for setting up of modern food processing units along with well-established supply chain.
- **Problems with Indian food parks :-**
 - Promoters have faced difficulties in selling the new concept to banks and, as a result, have failed to secure loans to build the parks.
 - Acquiring the 50 acres of land, which is mandatory under MFPS, has been another challenge that most developers have failed to address.
 - Convincing small enterprises to set up shop at these facilities has not been easy.
 - The overall economic slowdown, globally, and in India, did not help either

Mega Food Park Model: An Illustration



3.Cold chain:

- The objective of the Scheme of Cold Chain, Value Addition and Preservation Infrastructure is to provide integrated cold chain and preservation infrastructure facilities, without any break, from the farm gate to the consumer end to end, to reduce losses through efficient storage, transportation and minimal processing.
- It covers pre-cooling facilities at production sites, reefer vans, mobile cooling units as well as value addition centres which include infrastructural facilities like Processing/ Multi-line Processing/ Collection Centres, etc. for horticulture, organic produce, marine, dairy, meat and poultry etc.

4.Scheme for Creation/Expansion of Food Processing/Preservation Capacities

- The main objective of the Scheme is creation of processing and preservation capacities and modernisation/ expansion of existing food processing units with a view to increasing the level of processing, value addition leading to reduction of wastage.

5.Agro Processing Cluster:-

- The scheme aims at development of modern infrastructure and common facilities to encourage group of entrepreneurs to set up food processing units based on cluster approach.

6.Scheme for Creation of Backward and Forward Linkages

- The objective of the scheme is to provide effective and seamless backward and forward integration for processed food industry by plugging the gaps in supply chain in terms of availability of raw material and linkages with the market.
- Under the scheme, financial assistance is provided for setting up of primary processing centres/ collection centres at farm gate and modern retail outlets at the front end along with connectivity through insulated/ refrigerated transport.
- The Scheme is applicable to perishable horticulture and non-horticulture produce such as, fruits, vegetables, dairy products, meat, poultry, fish, Ready to Cook Food Products, Honey, Coconut, Spices, Mushroom, Retailers Shops for Perishable Food Products etc.



- The Scheme would enable linking of farmers to processors and the market for ensuring remunerative prices for agri produce.
- 7. Food and agro-based processing units and cold chain infrastructure have been classified under agriculture activities for Priority Sector Lending (PSL) as per the revised RBI Guidelines**
- 8. Ministry of Food Processing Industries has entered into agreements/Memorandum of Understanding (MoUs) with France and Italy for bilateral co-operation in the field of Food Processing Sector.**
- Salient features of these agreements/MoUs are (i) to attract investment for infrastructure development of food processing sector, (ii) developing institutional co-operation, and (iii) participation in food fairs, conferences workshops, etc
- 9. National mission on food processing:**
- Ministry of Food Processing Industries (MoFPI) launched a Centrally Sponsored Scheme National Mission on Food Processing (NMFP) to be implemented through State / UT Governments during 12th Five Year Plan (2012-17).
 - The scheme aimed at decentralization of implementation of the schemes, leading to substantial participation of State Governments/UTs. The State / UT Governments were given flexibility in implementing the schemes included in the NMFP based on the needs of local area.
 - The NMFP was to augment the capacity of the food processing by adoption of new technologies and improving the quality of food products as per the National / International standards. Mission also aimed to reduce wastage of agricultural produce, infuse new technologies, upgrade human resource capacities to provide impetus to the development of food processing sector in the country.
- 10. Modernization of Abattoirs (slaughterhouse)**
- This is a comprehensive scheme, which includes **establishment of modern abattoirs and modernization of existing abattoirs.**
 - Modernization of abattoirs will also include upscaling of infrastructure of existing abattoirs.
 - The scheme is implemented with the involvement of local bodies and has flexibility for involvement of private investors on PPP basis.
- 11. Agri Export Zones**
- To give thrust to export of agro products, new concept of Agri Export Zones was brought in 2001. **APEDA has been nominated as the Nodal Agency** to coordinate the efforts on the part of Central Government negotiations.
- 12. FOREIGN DIRECT INVESTMENT (FDI) IN FOOD PROCESSING SECTOR:**
- 100% FDI is permitted under the automatic route in food processing industries.
 - 100% FDI is allowed through approval route for trading, including through e-commerce in respect of food products manufactured and/or produced in India.
- 13. “MAKE IN INDIA” Programme**
- Food processing sector has been identified as one of the priority sector under “MAKE IN INDIA”
 - In the context of “MAKE IN INDIA” campaign, the Ministry has been disseminating information to potential investors to attract investment to the sector through a dedicated “Investors Portal” in which a range of information like resource base, availability of land, state specific policies, fiscal incentives are shared with the potential investors.
- 14. The government has taken several other steps to promote food processing sector in the country. A Special Fund of Rs. 2000 Crore has been setup in NABARD to make available affordable credit to designated food parks and agro-processing units in such designated food parks**
- 15. Investors Portal ‘Nivesh Bandhu’ Launched:-**
- The unique portal is aimed at bringing together information on Central and State government policies and incentives provided for the food-processing sector.
- 16. To aid MoFPI’s objectives, FSSAI simplified product approval:**
- Approved a large number of new Additives harmonized with the International Codex Standards
 - Notified an amendment to the regulations as a result of which non-standardized food products called proprietary foods (except novel food and nutraceuticals) that use ingredients and additives approved in the regulations will no longer require product approval. This has provided considerable relief to the industry.
- Despite these initiatives food processing industry still faces with the following issues:-**
- **Supply chain issues:**
 - high cost of raw material (driven by low productivity and poor agronomic practices)
 - Presence of intermediaries and APMC acts make it more complicated.
 - high cost of packaging, finance, transport and distribution
 - lack of organized retail



- **Logistics cost:**
 - Logistics cost is high for transportation, warehousing, material handling etc.
 - In India, Logistics accounts for about 13% of GDP, which translates to over USD130 billion.
 - This cost is significantly higher as compared most developed countries.
- **Economic issues:**
 - In India, the food processing industry is highly fragmented and is dominated by the unorganized sector
 - **Inadequate infrastructure:**
 - The inadequate support infrastructure which is the biggest bottleneck in expanding the food processing sector, in terms of both investment and exports includes:
 - long and fragmented supply chain
 - inadequate cold storage and warehousing facilities
 - Inadequate road, rail and port infrastructure.
 - lack of modern logistics infrastructure such as logistics parks, integrated cold chain solutions, last mile connectivity,
 - **Political issues:**
 - Absence of Comprehensive national level policy on food processing sector: The food processing sector is governed by statutes rather than a single comprehensive policy on food processing. India urgently needs a national food processing policy which incorporates tax breaks for the sector.

Way forward :-

- The right post harvest practices such as good processing techniques, and proper packaging, transportation and storage can play a significant role in reducing spoilage and extending shelf life.
- The challenges for the food preservation, distribution and processing sectors are diverse and demanding, and need to be addressed on several fronts to derive maximum market benefits. Presently, the organizations addressing the educational and R & D requirements are too few and there is a pressing need for supplementing their efforts.
- In the emerging scenario, the Food Engineering professional needs to develop sufficient awareness and appreciation of the relevant principles of life sciences, and physical sciences, as well as of a wide variety of other topics including: nutrition, preservation and storage techniques, processing unit operations, bio-processing, waste management, distribution and supply chain management, food laws and regulations and so on.

Topic: Major crops cropping patterns in various parts of the country, different types of irrigation and irrigation systems storage, transport and marketing of agricultural produce and issues and related constraints; e-technology in the aid of farmers

Q) The only way for the government to deliver on its promise to double the income of farmers, is to ensure the creation of a pan-Indian market for agricultural produce. Discuss. (250 words)

[Financial express](#)

Why this question

The decision to Maharashtra government to bring reforms in the mandis by delisting fruits and vegetables is well intentioned but for it to make a significant impact, the need is to create a pan Indian market for agricultural produce. There have been multiple efforts for this and thus needs to be prepared.

Key demand of the question

The question expects us to bring out the need for a pan Indian agricultural market, discuss the steps taken to so far to create pan Indian agricultural market and the effectiveness of such steps.

Directive word

Discuss – This is an all-encompassing directive – you have to debate on paper by going through the details of the issues concerned by examining each one of them. You have to give reasons for both for and against arguments.

Structure of the answer

Introduction – *Highlight the step of delisting fruits and vegetables from the mandis and mention that for such a step to bring about real impact, the need is to create pan Indian market.*



Body

Highlight the problems of APMC Act and the reasons why reforms are required

Discuss the steps taken by the government to create a unified national market for agricultural produce and the limitations of such steps

Highlight the steps that are needed still such as creation of accreditation agency to ensure quality assurance through an accreditation agency etc

Conclusion – *Highlight the importance of bringing reforms in APMC and create a pan Indian market for agricultural produce and mention that for this to happen both centre and state need to make committed reforms.*

Background:-

- Agriculture, which contributes 17 percent to the \$2.3-trillion economy, has remained relatively untouched by reforms with growth rates averaging below three percent over as many decades.
- Lack of technology, inefficient markets and small landholdings have worsened challenges.
- The ministry of agriculture estimates that to double farmer incomes by 2022-23, private investment in agriculture must jump two times to almost Rs 1,40,000 crore.

Measures taken for a unified market for agricultural produce by government:-

- Single national agriculture market (NAM) was launched in 2016 in the country, with a view to enable farmers to get a better price and for consumers to pay a lower price for agri-produce, a win-win situation at both ends of agri-value chains.
 - It was launched with the **goal of formulating a unified national market for agricultural commodities by integrating Agriculture Produce Marketing Committees or APMCs** across states in India.

Why there is a need to ensure creation of a pan Indian market for agricultural produce :-

- National Commission on Agriculture (1976) as well as the NCF (2006) had categorically emphasised that **higher output alone will not provide higher income to farmers unless it is well marketed.**
 - Recent incidents of farmers reportedly dumping their bumper produce of tomatoes and onions and emptying cans of milk into drains is clear evidence of it. **So had the markets been integrated, the surplus produce would have been transferred to deficit regions.**
- The Dalwai Committee on Doubling Farmers' Income has pointed out that the share of farmers in consumer's price is very low. It generally varies from 15 to 40 per cent.
 - **The dominant role of middlemen among others is primarily responsible for farmers not realising a reasonable price for their produce**, lowering farm income and profitability.
- The Committee of State Ministers, in charge of Agricultural Marketing to Promote Reforms (2013) has highlighted in its report that
 - **Covered and open auction platforms exist only in two-thirds of the regulated markets**
 - Cold storage units exist in less than one-tenth of the markets and grading facilities in less than one-third.
- States alone cannot revamp the agricultural marketing sector, primarily due to paucity of funds and technology.
- **Measures taken by government failed:-**
 - **States role:-**
 - Most of the reported transactions are intra-mandi. Inter-mandi and inter-state trading on the platform are minimal. What this means is that the states on e-NAM have not been able to provide farmers with better price discovery in other mandis of the same state or across states.
 - **E-payment facility is not available in most mandis, and that there is no competitive bidding reported in these states.**
 - **Infrastructure:-**
 - Even as the Centre works with States to persuade them, infrastructure such as reliable third-party certification for the produce in every mandi and robust computer systems, including uninterrupted web connectivity, need to be put in place.
 - **Middlemen influence:-**
 - The hold of the middleman, who often is also the financier of the farmer against a pledge of the produce is not completely broken.
 - **The challenges posed by present day APMCs :-**
 - **Fragmentation of State** into multiple market areas, each administered by separate APM
 - **Separate licenses** for each mandi are required for trading in different market areas within a state. This means that there is limited first point of sale for the farmer.



- Licensing barriers leading to conditions of monopoly
- Opaque process for price discovery
- An overwhelming majority of farmers still rely on the same broken system of markets under APMC, which is monopolistic and rent-seeking, with high commissions, especially for perishables.
- APMCs play dual role of regulator and Market. Consequently, their role as regulator is undermined by vested interest in lucrative trade. Generally, member and chairman are nominated/elected out of the agents operating in that market.
- Exporters, processors and retail chain operators cannot procure directly from the farmers as the produce is required to be channelised through regulated markets and licensed traders. There is, in the process, an enormous increase in the cost of marketing and farmers end up getting a low price for their produce.
- **NAM does not say anything about interstate taxes and levies**
- **Dominance of cash:**
 - Critical link was creating an electronic payment system that would allow the buyer credit the proceeds directly into the farmer's bank account. **But this has not taken off, and farmers continue to be paid in cash**
 - Physical trading is still taking place even in mandis that are integrated with e-NAM.

Way forward :-

- **Following steps need to be taken in a concerted manner :-**
 - Unyielding focus on agri-market reforms starting with basics of assaying, sorting, and grading facilities for primary produce as per nationally recognised and accepted standards
 - Creating suitable infrastructure at mandi-level (like godowns, cold storages, and driers) to maintain those standards
 - Bringing uniformity in commissions and fee structures that together do not go beyond, say 2%, of the value of produce
 - Evolving a national integrated dispute resolution mechanism to tackle cases where the quality of goods delivered varies from what is shown and bid for on the electronic platform. This would require significant investments, and changes in state APMC Acts.
- **Committee on Doubling Farmers' Income under the chairmanship of Ashok Dalwai, in its draft report, justifies the recommendation saying marketing has no boundaries. This necessitates a pan-India operation to meet the demand across the country.**
 - Besides, the committee has also recommended rolling out the model Agriculture Produce Marketing Committee (APMC) Act 2017 which would facilitate single-point levy of taxes, promote direct interface between farmers and end-users, and give freedom to farmers to sell their produce to whomsoever and wherever they get better prices
- Creation of accreditation agency to ensure quality assurance .
- The Economic Survey suggests incremental steps as possible solutions for setting up a national market.
 - State governments may be specifically persuaded to provide policy support for alternative or special markets in private sector.
 - In view of the difficulties in attracting domestic capital for the setting-up marketing infrastructure, liberalization in FDI in retail could create possibilities for filling in the massive investment and infrastructure deficit in supply chain inefficiencies.
- **Roping in the private sector for investments** would create jobs and promote efficient agri-value chains.
- Buying the produce from farmers below the MSP should be made illegal. The 'model price' that these markets offer should therefore be replaced with MSP.

Q) India's agricultural policy for the next decade should shift away from cereal (and quantity) centricity and be primarily focused on water effectiveness. Discuss. (250 words)

Key demand of the question

The question expects us to discuss how the focus areas for promoting agriculture need to shift away from enhancing quantity of particular food crops and focus on enhancing effectiveness of irrigation system to tackle the problem of water scarcity. We have to debate this hypothesis by bringing out points both for and against the current focus area and how focussing on water effectiveness is likely to improve the situation. We need to conclude with way forward.



Directive word

Discuss – This is an all-encompassing directive – you have to debate on paper by going through the details of the issues concerned by examining each one of them. You have to give reasons for both for and against arguments.

Structure of the answer

Introduction – Explain how critical agricultural sector and its growth is for Indian economy.

Body

- Explain that the current focus area of the agricultural policies, since the time of green revolution has been to increase productivity and quantity. The focus has remained on certain food grains which has now become a part of the problem.
- Thereafter, debate the advantages and disadvantages of the current approach. In advantages one can talk about legislation like right to food which require increasing cereal production, MSP and economic requirement dictates the crop choices if farmers etc
- Thereafter, explain why water scarcity is going to be a huge hindrance to agricultural growth. Bring out points like climate change, salinity, groundwater availability etc. Explain the way forward such as focussing on drip irrigation etc

Conclusion – Highlight the urgency of the situation and give an overview of what needs to be done.

Background:-

- Agriculture accounts for 70% of all water withdrawals globally. Irrigated land is more than twice as productive as rain-fed cropland.
- India's biggest problem is that of rampant water-waste in agriculture that consumes around 78% of India's total freshwater resources.
- Just rice and sugarcane consume more than 60% of the irrigation water in the country while occupying just around 24% of the total gross cropped area.

India's current agricultural policy focus:-

- In the past 60 years, **India's agriculture policy has focused mainly on rice and wheat and neglected millets.**
 - Supply of subsidised rice and wheat through the public distribution system and state nutrition programmes have also played a big role in changing the dietary habits of people.
 - Millet and other crops which use less water were not promoted much due to low produce, weak markets, difficult processing methods and low consumer interest even though many urban health conscious individuals are now favouring them over the traditional paddy and wheat.
 - In times of climate change millets score over paddy as they require less water and can withstand extreme temperatures.
- **Indian policy has not been able to evolve from "farmer welfare" to "agricultural household sustainability".**
 - The lack of long-term policy planning combined with a welfare-oriented policy results in a periodic loan-waiver approach which perpetuates a poor credit culture in the agriculture sector and, consequently, a fragile state balance sheet. This is a vicious circle of waiver addiction and debt, both at the rural household and state level.
- *MSP and economic requirement dictates the crop choices of farmers.*
- **Rural India:-**
 - In rural India, zooming agricultural production over the years has mostly been fuelled by **heavy use of groundwater** because **not enough investment was made for using surface and rainwater through canals and reservoirs.**
- **Stressed Aquifers :-**
 - Studies by NASA using satellite imagery show that the Indus basin, which includes the high food producing states of Punjab and Haryana, is one of the **most stressed aquifers in the world.**
 - If the current trends continue, by 2030 nearly 60% of Indian aquifers will be in a critical condition. This means that some 25% of the agricultural production will be at risk -a devastating scenario.
- **Subsidies:-**
 - No crop diversification efforts will work so long as free electricity offsets the costs of pumping out groundwater



- A survey by the Punjab agriculture department indicates that in the last eight years, more than 54 per cent of farmers have installed water guzzling submersibles, and more than 45 per cent have got their motors renewed to increase the power, or simply purchased higher capacity motors.
- **Inefficient irrigation methods:-**
 - Irrigation for agriculture alone accounts for over 80% of water use in India, more than any other sector. However, much of this water is applied inefficiently using flood irrigation, which remains the prevailing irrigation practice among farmers in India.
 - This results in considerable losses of water around 60% of water applied in the form of surface run off, percolation and bare soil evaporation that does not contribute to any increases in yield.
- **Paddy cultivation:-**
 - **Paddy cultivation is heavily water-intensive on average.**

Why there is a need to change focus from cereal centrality to water effectiveness:-

- **Issues with the current policy:-**
 - Competition for water resources is expected to increase in the future, with particular pressure on agriculture.
 - **Research into best agricultural practises has declined due to acute shortage in funds for infrastructure and operations**, or broad access to state-of-the-art technologies that are needed to succeed in this respect.
 - **There is also the problem of negligible connection between research and extension /dissemination of the research inputs to the stakeholders** (particularly the farmers), or between these services and the private sector, thereby creating a lack of dialogue between the major stakeholders.
- **Ability to improve water management in agriculture is constrained by perverse policies, major institutional performance, and financing limitations.**
 - The critical public and private institutions – including agricultural and water ministries, basin authorities, irrigation managers, water user and farmer organizations generally lack the authorizing environment and capacities to carry out their functions effectively.
- **Excessive dependence on rain:-**
 - Seven decades after independence, Indian agriculture remains hostage to the whims of the monsoon rain
 - The principal reason for this is that 73 million hectares out of a net sown area of 141 million hectares are unirrigated and rainfall dependent.
- **Inefficient and dilapidated canal irrigation systems have led to a spurt in groundwater development.** India is the largest user of groundwater in the world with over 60 per cent of irrigated agriculture and 85 per cent of drinking water supplies dependent on aquifers.
- **Input subsidies and commodity price policies favour crops like paddy that are water intensive.**

What needs to be done ?

- As there is high reliance of agriculture on water, **India also needs to improve the management of irrigation and drainage system. Drip irrigation, piped conveyance, and better on-farm management of water are among the various ways that this can be realised.**
- **Modernizing ways of getting water from underground sources and other water bodies, irrigation and drainage is needed** along with including the farmers in a participatory model where their inputs are taken all along the way.
- **Water effectiveness project will not only focus on bringing more areas under irrigation in a sustainable manner but also focus on sprinkler and drip irrigation.**
 - In addition, the water effectiveness emphasis should insist on agricultural power being priced to the farmer. The only way to reduce gross misuse of ground water is to price the main input
 - A water effectiveness focus for agriculture policy will improve yield, change cropping patterns and reduce misery. It is the only way to mitigate the significant impact likely from climate change.
- **Lessons from states:-**
 - States like Odisha, Telangana and Andhra Pradesh have launched special programmes to promote these nutri cereals in the National Year of Millets. This needs to be done by other states.
 - Lessons can also be drawn from the work of Sankalpa Rural Development Society (SRDS) which has been training farmers of Karnataka on revival of defunct borewells.
 - Sharing of borewells by a group of farmers is another possibility which the WASSAN (Watershed Support Services and Activities Network) has already worked on successfully in Andhra Pradesh. Such instances, though on a small scale, offer hope as they are easier to replicate.



- System of Rice Intensification (SRI) has caught imagination of several farmers especially in Bihar and Andhra Pradesh as a water-conserving method of paddy cultivation. The technique needs a bigger push from the Centre to make it a universal concept.
- On policy level, attempts are being made in states like Maharashtra to secure water rights to users (including agricultural users), have tradable water rights and in the process privatise water.
- **Techniques needed:-**
 - Options such as enhanced seeds, low-till, alternate wetting and drying, sustainable rice intensification, and others exist, but require matching improvements in water delivery systems to provide on-demand service, with the use of information technology like soil moisture sensors and satellite evapotranspiration measurement to improve efficiency and productivity of water in agriculture.
- **Policy changes needed:-**
 - Constitutional amendment that makes agriculture and water use a part of the concurrent list in the Constitution (currently agriculture, dairy, meat and fisheries are state subjects) is necessary
 - This would provide a federal boost to states, with a primary emphasis laid on how to use water sources and resources effectively.
- **Groundwater focus:-**
 - Misuse of groundwater can only be checked with a pricing of the elements that used to extract the water such as electricity, without giving state subsidies beyond a point.
 - To deal with this crisis, aquifer recharge and rainwater conservation through community ponds and recharge wells should be promoted with involvement of gram sabhas.

Q) A one nation, one market model is the reform required to deal with issues related to agricultural marketing. Discuss. (250 words)

Key demand of the question

The question expects us to highlight the issues with current regime in brief, discuss what kind of model is being talked about, mention about the advantages and disadvantages of one nation, one market model. Finally, we need to provide our view on unified markets and way forward.

Directive word

Discuss – This is an all-encompassing directive – you have to debate on paper by going through the details of the issues concerned by examining each one of them. You have to give reasons for both for and against arguments.

Structure of the answer

Introduction – Mention that the aim is to double farmer's income within a time frame, for which marketing of agricultural produce needs to be looked at and reformed.

Body

Discuss in brief the issues with APMC regime. Not more than 2-3 lines.

Thereafter explain what do we mean by one nation, one market. Talk about e-NAM and steps taken by the government to promote it.

Discuss the advantages and disadvantages of such a model.

Conclusion – give your view on whether it would turn out to be a panacea for agricultural sector and briefly mention way forward.

Background:-

- Agriculture, which contributes 17 percent to the \$2.3-trillion economy, has remained relatively untouched by reforms with growth rates averaging below three percent over as many decades.
- Lack of technology, inefficient markets and small landholdings have worsened challenges.

Measures taken for a one nation one market for agricultural produce by government :-

- Single national agriculture market (NAM) was launched in 2016 in the country, with a view to enable farmers to get a better price and for consumers to pay a lower price for agri-produce, a win-win situation at both ends of agri-value chains.



- It was launched with the **goal of formulating a unified national market for agricultural commodities by integrating Agriculture Produce Marketing Committees** or APMCs across states in India.
- e-NAM was to help farmers find the best possible price for their produce by expanding the market nationally and eliminating middlemen.
- The highlight of the scheme is the single point levy of market fees, i.e. on the first wholesale purchase from the farmer

Why there is a need to ensure creation of a one nation one market :-

- National Commission on Agriculture (1976) as well as the NCF (2006) had categorically emphasised that **higher output alone will not provide higher income to farmers unless it is well marketed.**
 - Recent incidents of farmers reportedly dumping their bumper produce of tomatoes and onions and emptying cans of milk into drains is clear evidence of it. **So had the markets been integrated, the surplus produce would have been transferred to deficit regions.**
- The Dalwai Committee on Doubling Farmers' Income has pointed out that the share of farmers in consumer's price is very low. It generally varies from 15 to 40 per cent.
 - **The dominant role of middlemen among others is primarily responsible for farmers not realising a reasonable price for their produce,** lowering farm income and profitability.
- The Committee of State Ministers, in charge of Agricultural Marketing to Promote Reforms (2013) has highlighted in its report that
 - **Covered and open auction platforms exist only in two-thirds of the regulated markets**
 - Cold storage units exist in less than one-tenth of the markets and grading facilities in less than one-third.
- **Measures taken by government failed:-**
 - **States role:-**
 - Most of the reported transactions are intra-mandi. Inter-mandi and inter-state trading on the platform are minimal. What this means is that the states on e-NAM have not been able to provide farmers with better price discovery in other mandis of the same state or across states.
 - **E-payment facility is not available in most mandis, and that there is no competitive bidding reported in these states.**
 - **States alone cannot revamp the agricultural marketing sector, primarily due to paucity of funds and technology.**
 - **Infrastructure:-**
 - Even as the Centre works with States to persuade them, infrastructure such as reliable third-party certification for the produce in every mandi and robust computer systems, including uninterrupted web connectivity, need to be put in place.
 - **Middlemen influence:-**
 - The hold of the middleman, who often is also the financier of the farmer against a pledge of the produce is not completely broken.
 - **The challenges posed by present day APMCs :-**
 - **Fragmentation of State** into multiple market areas, each administered by separate APM
 - **Separate licenses** for each mandi are required for trading in different market areas within a state. This means that there is limited first point of sale for the farmer.
 - Licensing barriers leading to conditions of monopoly
 - Opaque process for price discovery
 - An overwhelming majority of farmers still rely on the same broken system of markets under APMC, which is monopolistic and rent-seeking, with high commissions, especially for perishables.
 - APMCs play dual role of regulator and Market. Consequently, their role as regulator is undermined by vested interest in lucrative trade. Generally, member and chairman are nominated/elected out of the agents operating in that market.
 - Exporters, processors and retail chain operators cannot procure directly from the farmers as the produce is required to be channelised through regulated markets and licensed traders. There is, in the process, an enormous increase in the cost of marketing and farmers end up getting a low price for their produce.
 - **NAM does not say anything about interstate taxes and levies**



- **Dominance of cash:**
 - Critical link was creating an electronic payment system that would allow the buyer credit the proceeds directly into the farmer's bank account. **But this has not taken off, and farmers continue to be paid in cash**
 - Physical trading is still taking place even in mandis that are integrated with e-NAM.

Way forward :-

- **Following steps need to be taken in a concerted manner :-**
 - Unyielding focus on agri-market reforms starting with basics of assaying, sorting, and grading facilities for primary produce as per nationally recognised and accepted standards
 - Creating suitable infrastructure at mandi-level (like godowns, cold storages, and driers) to maintain those standards
 - Bringing uniformity in commissions and fee structures that together do not go beyond, say 2%, of the value of produce
 - Evolving a national integrated dispute resolution mechanism to tackle cases where the quality of goods delivered varies from what is shown and bid for on the electronic platform. This would require significant investments, and changes in state APMC Acts.
- **Committee on Doubling Farmers' Income under the chairmanship of Ashok Dalwai, in its draft report,** justifies the recommendation saying marketing has no boundaries. This necessitates a pan-India operation to meet the demand across the country.
 - Besides, the committee has also recommended rolling out the model Agriculture Produce Marketing Committee (APMC) Act 2017 which would facilitate single-point levy of taxes, promote direct interface between farmers and end-users, and give freedom to farmers to sell their produce to whomsoever and wherever they get better prices
- Creation of accreditation agency to ensure quality assurance .
- The Economic Survey suggests incremental steps as possible solutions for setting up a national market.
 - State governments may be specifically persuaded to provide policy support for alternative or special markets in private sector.
 - In view of the difficulties in attracting domestic capital for the setting-up marketing infrastructure, liberalization in FDI in retail could create possibilities for filling in the massive investment and infrastructure deficit in supply chain inefficiencies.
- **Roping in the private sector for investments** would create jobs and promote efficient agri-value chains.
- Buying the produce from farmers below the MSP should be made illegal. The 'model price' that these markets offer should therefore be replaced with MSP.

Q) The agriculture sector is changing rapidly and requires proactive policy management to be able to maximize benefits for all stakeholders. Discuss. (250 words)

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Why this question

Agricultural sector is under stresses of various kinds both due to natural reasons as well as due to policy issues. This article gives a general sense of the major policy challenges before the agriculture sector and the need for proactive policies to ensure overall benefit for such a critical sector of the economy. This question would help you revise your general concepts with respect to the contemporary issues facing agricultural sector.

Key demand of the question

The question expects us to discuss the challenges facing agricultural sector and explain why the age old policy approach in agricultural sector needs some changes. We need to explain the nature of policy changes required and why they would be beneficial.

Directive word

Discuss – here your discussion should bring out the challenges facing agricultural sector and debate the nature or policy changes that are required.



Structure of the answer

Introduction – explain how significant agriculture sector is for the economy and the status quo of the sector.

Body

Explain the challenges facing the sector – natural issues caused droughts etc, and issues related to such as the problems facing marketing of agricultural produce, price discovery of agricultural produce, issues due to MSP, the supply demand mismatch such as in the case of pulses etc

Thereafter, we need to explain the current efforts that are being taken such as restricting exports, e-NAM etc.

Explain the reasons why such reforms are unable to address the issues and what more needs to be done

Conclusion – Explain how crucial the sector is for India and discuss the way forward.

Background:-

- Agriculture is the primary source of livelihood for about 58 per cent of India's population. Gross Value Added by agriculture, forestry and fishing is estimated at Rs 17.67 trillion. Yet Indian agriculture faces multiple issues.

Agriculture sector is changing rapidly :-

- **Aggressive cultivation led to plunge in demand:-**
 - Once prices have increased farmers cultivated the crop aggressively leading to plunging of prices.
 - Two years ago, garlic fetched an average Rs 60 per kg rate in Rajasthan's Kota mandi. Enthused by it, farmers in the Hadoti region planted more area, only to see prices halve last May.
 - Similar was the case for other vegetables.
- **Farmers income remained low:-**
 - India had record food production in 2017-18, but farmers income remained low and stagnant.
- **Issues with MSP:-**
 - Imposition of MSP beyond some point is **market distorting** as it severs the link between prices and demand-supply. This can also be inflationary and out of sync with the physical market dynamics.
 - Support price does not come with a commitment to buy whatever farmers offer. Actual procurement will be limited by the fiscal room available, especially at a time when a significantly higher fiscal deficit could lead to further pressure on the rupee
 - **Input costs:-**
 - The cost of cultivation varies across states while MSP's are based on a weighted all India average so farmers don't get guaranteed profits.
 - MSP's have failed to keep pace with input costs.
 - **Only a selected few states such as Punjab, MP, Haryana etc have well developed procurement infrastructure**
- **Consumer bias:-**
 - In most years, for the majority of agri-products, the policymakers used restrictive export policies to keep domestic prices low. This showed the pro-consumer bias in the policy complex.
- **Lack of adequate storage facilities lead to wastage.** For instance farmers dump truckloads of vegetables on road.
- Land degradation has become a major challenge and cost of farming is constantly rising with usage of fertilizer, pesticides, expensive seed varieties, machinery, labour cost, rise in fuel prices, vagaries of monsoon. This further complicates the livelihood of farmers
- **The challenges posed by present day APMCs :-**
 - **Fragmentation of State** into multiple market areas, each administered by separate APM
 - **Separate licenses** for each mandi are required for trading in different market areas within a state. This means that there is limited first point of sale for the farmer.
 - Licensing barriers leading to conditions of monopoly
 - Opaque process for price discovery
 - An overwhelming majority of farmers still rely on the same broken system of markets under APMC, which is monopolistic and rent-seeking, with high commissions, especially for perishables.
- Small and fragmented landholdings.



Proper policy management is necessary :-

- Recently NITI Aayog has suggested 'Price Deficiency Payment' system to address the gaps in Minimum Support Price (MSP) based procurement of crops.
- Single national agriculture market (NAM) was launched in 2016 in the country, with a view to enable farmers to get a better price and for consumers to pay a lower price for agri-produce, a win-win situation at both ends of agri-value chains.
- The government continues to use old draconian measures, including stocking restrictions and bans on exports and futures trading, to even small increase in food prices. **Such steps may bring temporary relief to consumers, but end up hurting farmers.**
- **Pradhan Mantri Fasal Bhima Yojana for insurance protection of farmers.**

Measures needed:-

- Government needs to allow agro trading companies to buy more in the Indian market, especially given the limitations of the Food Corporation of India.
- **Procurement system of the government needs to be streamlined.**
 - There need to be reforms in APMC acts to ensure farmer selling directly to farmers
- **Based on Telangana experience** it is time to consider a transparent ,crop neutral and easier to implement income support programme.
 - The state government gives a payment of Rs.10000 per hectare of cultivable land to all farmers irrespective of the crops they raise.
- The ambitious projects like e-NAM, doubling farmer's income by 2022, price stabilisation fund, implementation of Swaminathan and Shanta Kumar committee is required.
- **Following steps need to be taken in a concerted manner :-**
 - Unyielding focus on agri-market reforms starting with basics of assaying, sorting, and grading facilities for primary produce as per nationally recognised and accepted standards
 - Creating suitable infrastructure at mandi-level (like godowns, cold storages, and driers) to maintain those standards
 - Bringing uniformity in commissions and fee structures that together do not go beyond, say 2%, of the value of produce
 - Evolving a national integrated dispute resolution mechanism to tackle cases where the quality of goods delivered varies from what is shown and bid for on the electronic platform. This would require significant investments, and changes in state APMC Acts.
- **Committee on Doubling Farmers' Income under the chairmanship of Ashok Dalwai, in its draft report,** justifies the recommendation saying marketing has no boundaries. This necessitates a pan-India operation to meet the demand across the country.
 - Besides, the committee has also recommended rolling out the model Agriculture Produce Marketing Committee (APMC) Act 2017 which would facilitate single-point levy of taxes, promote direct interface between farmers and end-users, and give freedom to farmers to sell their produce to whomsoever and wherever they get better prices
- Creation of accreditation agency to ensure quality assurance .
- The Economic Survey suggests incremental steps as possible solutions for setting up a national market.
 - State governments may be specifically persuaded to provide policy support for alternative or special markets in private sector.
 - In view of the difficulties in attracting domestic capital for the setting-up marketing infrastructure, liberalization in FDI in retail could create possibilities for filling in the massive investment and infrastructure deficit in supply chain inefficiencies.
- **Roping in the private sector for investments** would create jobs and promote efficient agri-value chains.
- Buying the produce from farmers below the MSP should be made illegal. The 'model price' that these markets offer should therefore be replaced with MSP.
- **Agricultural extension services need strengthening, to impart new scientific knowledge to farmers.** This should be facilitated through noted NGOs and companies in agro-business.
- Further, each district should have 2-3 centres where farmers can meet and exchange knowledge on matters of crop insurance, banking and supply of inputs etc. **These centres should assist them to integrate with eNAM for getting better price of their produce.**
- **India needs to create centres of excellence in our agricultural universities for preparing region-wise strategies to raise crop yield.**



Topic– Land reforms in India.

Q) What were the objectives of land reforms in independent india. Discuss. Also Discuss why those reforms have failed to achieve the desired results. (250 words)

Reference

Structure of the answer

Introduction– write a few introductory lines about the land reforms done in post-independent India. E.g The Indian Government was committed to land reforms and consequently laws were passed by all the State Governments during the Fifties with the avowed aim of abolishing landlordism, distributing land through imposition of ceilings, protection of tenants and consolidation of land-holdings. One of the significant achievements of these acts was the abolition of absentee landlordism in several parts of India.

Body-

Discuss the objectives of land reforms. E.g (1) to enhance the productivity of land by improving the economic conditions of farmers and tenants so that they may have the interest to invest in and improve agriculture, (2) to ensure distributive justice and to create an egalitarian society by eliminating all forms of exploitation, (3) to create a system of peasant proprietorship with the motto of land to the tiller and (4) to transfer the incomes of the few to many so that the demand for consumer goods would be created.

Discuss why land reforms could not achieve the desired results. E.g The act did not benefit sub-tenants and sharecroppers, as they did not have occupancy rights on the land they cultivated; Intermediaries were abolished, but the rent receiving class continued to exist; Many landlords managed to retain considerable land areas under the various provisions of the laws. Benami holdings became the order of the day in many States; The problems of transferring ownership rights from the actual cultivators of the land, the tenants, the sub-tenants, sharecroppers, therefore, remained far from resolved etc.

Conclusion– based on your discussion, form a fair and a balanced conclusion on the given issue.

Background:-

- Nearly two-thirds of all pending cases in Indian courts are related to property disputes. NITI Aayog has said that such property cases take an average of 20 years to settle. The result is that millions of Indians cannot use their principal asset as collateral to borrow from the formal financial system. Hence the need for land reforms in India. The government has now pushed the year of completion to 2021.

Objectives of land reforms:-

- To enhance the productivity of land by improving the economic conditions of farmers and tenants so that they may have the interest to invest in and improve agriculture
- To ensure distributive justice and to create an egalitarian society by eliminating all forms of exploitation
- To create a system of peasant proprietorship with the motto of land to the tiller
- To transfer the incomes of the few to many so that the demand for consumer goods would be created.

Land reforms in India :-

- The process of land reform after independence basically occurred in two broad phases.
 - The first phase also called the phase of institutional reforms started soon after independence and continued till the early 1960s focussed on the following features:
 - Abolition of intermediaries like zamindars, jagirdars, etc.
 - Tenancy reforms involving providing security of tenure to the tenants, decrease in rents and conferment of ownership rights to tenants
 - Ceilings on size of landholdings
 - Cooperativization and community development programmes.
 - The second phase beginning around the mid- or late 1960s saw the gradual ushering in of the so-called Green Revolution and has been seen as the phase of technological reforms.
- **Digitisation of land records:**–
 - Making land records available to all, to contain/check property frauds, became one of the objectives of the government of India in the late 1980s.



- To address the same, the Digital India Land Records Modernisation Programme (DILRMP) was launched by the government of India in August 2008.
 - The main aim of the programme, was to computerise all land records, including mutations, improve transparency in the land record maintenance system, digitise maps and surveys, update all settlement records and minimise the scope of land disputes.
- Digitisation would provide clear titles of land ownership that could be monitored easily by government officials, to facilitate quicker transactions. This will also reduce construction timelines and the overall cost for the developer, the benefits of which can be transferred to the consumer, making property prices more attractive.

Failure of land reforms:-

1. Weaknesses with the zamindari abolition:

- The **absence of adequate land records** made implementation of these acts difficult.
- **Personal cultivation:**
 - 'personal cultivation' was very loosely defined which led to not only those who tilled the soil, but also those who supervised the land personally or did so through a relative, or provided capital and credit to the land, to call themselves a cultivator.
 - Also in Uttar Pradesh, the zamindars were permitted to retain lands that were declared to be under their 'personal cultivation'.
 - Moreover, in states like Uttar Pradesh, Bihar and Madras there was no limit on the size of the lands that could be declared to be under the 'personal cultivation' of the zamindar
- Zamindars resorted to large-scale eviction of tenants, mainly the less secure small tenants.
- Even after the laws were enacted the landlords used the judicial system to defer the implementation of the laws.
- Zamindars refused to hand over the land records in their possession, forcing the government to go through the lengthy procedure of reconstructing the records.
- Implementation of the law was made difficult **with the collusion between the landlords and lower-level revenue officials.**

2. Weaknesses of tenancy reforms:

- The provisions introduced to protect the small landowners were misused by the larger landlords with the active connivance of the revenue officials.
- In fact, the right of resumption and the loose definition of 'personal cultivation' was used for eviction of tenants on a massive scale.
- The inordinate delays in enacting and implementing the legislations enabled the zamindars to evict potential beneficiaries before the law came into force.
- Even after the tenants got legal protection against eviction, large-scale evictions occurred.
- Voluntary surrenders by tenants also took place as they were 'persuaded' under threat to give up their tenancy rights 'voluntarily'.
- To avoid evictions, the Fourth Plan was constrained to recommend that all voluntary surrenders should only be in favour of the government, which could allot such lands to eligible persons. **However, only a handful of states acted upon this recommendation.**
- **No tenancy rights to sharecroppers.**
 - In some states such as Uttar Pradesh, only cash rent payers were treated as tenants and not others who were termed as sharecroppers
- In many cases tenancy legislations led to tenancy being continued in a concealed form.
 - The tenants were now called 'farm servants' though they continued in exactly the same status.
- In West Bengal sharecroppers, known as bargadars received no protection till as late as July 1970 when the West Bengal Land Reforms Act was amended to accord limited protection to them
- **Most tenancies were oral and informal and** were not recorded.
- Providing security of tenure to all tenants, met with only limited success. There were still large numbers who remained unprotected. So reducing rents to a 'fair' level was almost impossible to achieve.
- The market rates of rent tended to be around 50 per cent of gross produce and it was only the poor insecure tenants or sharecroppers who paid it
- The tenant often ended up bearing the cost of the production inputs either fully or to a substantial extent.
- The Green Revolution which started in some parts of India in the late 1960s aggravated the problems, with land values and rentals rising further.
- The acquisition of ownership rights by tenants was achieved only partially.



- Tenants hardly had any motivation to try and acquire full ownership which would involve not only raising capital but legal and other complications.

3. Weaknesses in Land Ceiling Legislation:-

- The **long delay and the nature of the legislation**, ensured that the ceilings would have a very muted impact as by the time the ceiling legislations were in place, there were barely any holdings left above the ceiling .
- Post independence India had more than 70 per cent of landholdings in India under 5 acres so the ceiling fixed on existing holdings by the states were very high.
- In most states **the ceilings were imposed on individual and not family holdings**, enabling landowners to divide up their holdings in the names of relatives or make benami transfers merely to avoid the ceiling.
- Further, **in many states the ceiling could be raised** if the size of the family of the landholder exceeded five.
- A large **number of exemptions to the ceiling limits** were permitted by most states following the Second Plan recommendations that certain categories of land could be exempted from ceilings.
 - The exemptions were often carried to absurd limits with Tamil Nadu reportedly permitting twenty -six kinds of exemptions
- Exemption to land held by cooperatives was open to great misuse with landlords transferring their lands to bogus cooperatives.
- The ceiling laws led to at least some landowners shifting to direct efficient farming in order to avoid alienation of their lands.
- The landowners also resorted to mass eviction of tenants, resuming their lands at least up to the ceiling limit, and claimed to have shifted to progressive farming under their direct supervision.
 - In fact, despite the ceiling legislations which were passed by most states by 1961, till the end of 1970 not a single acre was declared surplus in large states like Bihar, Mysore, Kerala, Orissa and Rajasthan.

4. Digitization of land records failed :-

- **Insufficient data:-**
 - Although the government wants complete digitisation of land records, due to the lack of clear and sufficient data and mismanagement between the various agencies handling land records, the data registered at various government levels is not identical.
- Statistics from the DILRMP show that in most states, **the digital land record database has not been synced with the digitised land registration database.**
- **Experience from states:-**
 - Progress over the past decade has been uneven, with some states, such as Madhya Pradesh, Andhra Pradesh, Telangana, Chhattisgarh, Tamil Nadu and Maharashtra, doing better than the others. However, there are challenges, even in advanced states such as Maharashtra.
- New digitized land records do a good job in reflecting ownership of land, **but less so when it comes to recording encumbrances and area of land parcels.**

5. Weaknesses of consolidation of land holdings:

- The programme failed to achieve its desired objective because the farmers are reluctant to exchange their lands for the new one. The arguments given by the farmers is that there existing land is much more fertile and productive than the new land provided under land consolidation.
- The farmers also complained about nepotism and corruption in the process of consolidation. The farmers complained that the rich and influential often bribes and manage to get fertile and well-situated land, whereas the poor farmers get unfertile land.
- Due to lack of adequate political and administrative support, the progress made in terms of consolidation of holding was not very satisfactory.

6. Failure of cooperative farming:

- **Attachment With Land :-**
 - The farmers are not willing to surrender the rights of land infavour of the society because they have too much attachment with it.
- **Lack of Cooperative Spirit :-**
 - The spirit of cooperation and love is lacking among farmers. They are divided in various sections on caste basis.
- **Illiteracy :-**
 - some of them are using the old methods of cultivation.



- **Lack of Capital :-**
 - The co-operative farming societies are also facing the capital shortage problem and these are unable to meet the growing needs of agriculture. Credit facilities to these societies are also not sufficient.
- **Re-Payment of Debt :-**
 - Sometimes debt is not re-paid in time which creates many problems for the financial institutions. Some members do not realize their responsibility and it becomes the cause of failure.

Q) Land reforms remain an unfinished agenda even after 70 years of independence. Do you agree? Critically analyse. (250 words)

Key demand of the question

The question first expects us to explain why land reforms are criticized so many years post its initiation as being incomplete. Discuss the reasons why the task of land reforms is still incomplete. Discuss the steps being taken to complete it.

Directive word

Critically analyze – When asked to analyze, you have to examine methodically the structure or nature of the topic by separating it into component parts and present them as a whole in a summary. When ‘critically’ is suffixed or prefixed to a directive, all you need to do is look at the good and bad of something and give a fair judgement.

Structure of the answer

Introduction – Explain about the land reforms

Body

Discuss how land reforms were carried out post independence and their results. Discuss the fact that only some state implemented it properly while the other sought to preserve the status quo.

Discuss why land reform is an unfinished agenda – non modernization of land records, small size of land holdings

Discuss the steps being taken still to complete the task of land reforms – model land leasing law by Niti ayog etc

Conclusion – discuss the importance of completion of land reforms and highlight way forward.

Background:-

- The process of land reform after independence basically occurred in two broad phases.
- The first phase also called the phase of institutional reforms started soon after independence and continued till the early 1960s focussed on the following features:
 - Abolition of intermediaries like zamindars, jagirdars, etc.
 - Tenancy reforms involving providing security of tenure to the tenants, decrease in rents and conferment of ownership rights to tenants:-
 - In the late 1960s a massive programme of conferment of titles to lands to hutment dwellers and tenants was undertaken in Kerala. The programme achieved considerable success.
 - **Operation Barga:**
 - Similarly in West Bengal Operation Barga was launched in 1978 with the objective of achieving the registration of sharecroppers and provide them permanent occupancy and heritable rights and a crop division of 1:3 between landowner and sharecropper.
 - Ceilings on size of landholdings
 - Cooperativization and community development programmes.
- The second phase beginning around the mid- or late 1960s saw the gradual ushering in of the so-called Green Revolution and has been seen as the phase of technological reforms.
 - **Digitisation of land records:-**
 - Making land records available to all, to contain/check property frauds, became one of the objectives of the government of India in the late 1980s.
 - To address the same, the Digital India Land Records Modernisation Programme (DILRMP) was launched by the government of India in August 2008.



- The main aim of the programme, was to computerise all land records, including mutations, improve transparency in the land record maintenance system, digitise maps and surveys, update all settlement records and minimise the scope of land disputes.
- Digitisation would provide clear titles of land ownership that could be monitored easily by government officials, to facilitate quicker transactions. This will also reduce construction timelines and the overall cost for the developer, the benefits of which can be transferred to the consumer, making property prices more attractive.

Failure of land reforms :-

1. Weaknesses with the zamindari abolition:

- The **absence of adequate land records** made implementation of these acts difficult.
- **Personal cultivation:**
 - ‘personal cultivation’ was very loosely defined which led to not only those who tilled the soil, but also those who supervised the land personally or did so through a relative, or provided capital and credit to the land, to call themselves a cultivator.
 - Also in Uttar Pradesh, the zamindars were permitted to retain lands that were declared to be under their ‘personal cultivation’.
 - Moreover, in states like Uttar Pradesh, Bihar and Madras there was no limit on the size of the lands that could be declared to be under the ‘personal cultivation’ of the zamindar
- Zamindars resorted to large-scale eviction of tenants, mainly the less secure small tenants.
- Even after the laws were enacted the landlords used the judicial system to defer the implementation of the laws.
- Zamindars refused to hand over the land records in their possession, forcing the government to go through the lengthy procedure of reconstructing the records.
- Implementation of the law was made difficult **with the collusion between the landlords and lower-level revenue officials.**

2. Weaknesses of tenancy reforms:

- The provisions introduced to protect the small landowners were misused by the larger landlords with the active connivance of the revenue officials.
- In fact, the right of resumption and the loose definition of ‘personal cultivation’ was used for eviction of tenants on a massive scale.
- The inordinate delays in enacting and implementing the legislations enabled the zamindars to evict potential beneficiaries before the law came into force.
- Even after the tenants got legal protection against eviction, large-scale evictions occurred.
- Voluntary surrenders by tenants also took place as they were ‘persuaded’ under threat to give up their tenancy rights ‘voluntarily’.
- To avoid evictions, the Fourth Plan was constrained to recommend that all voluntary surrenders should only be in favour of the government, which could allot such lands to eligible persons. **However, only a handful of states acted upon this recommendation.**
- **No tenancy rights to sharecroppers.**
 - In some states such as Uttar Pradesh, only cash rent payers were treated as tenants and not others who were termed as sharecroppers
- In many cases tenancy legislations led to tenancy being continued in a concealed form.
 - The tenants were now called ‘farm servants’ though they continued in exactly the same status.
- In West Bengal sharecroppers, known as bargadars received no protection till as late as July 1970 when the West Bengal Land Reforms Act was amended to accord limited protection to them
- **Most tenancies were oral and informal and** were not recorded.
- Providing security of tenure to all tenants, met with only limited success. There were still large numbers who remained unprotected. So reducing rents to a ‘fair’ level was almost impossible to achieve.
- The market rates of rent tended to be around 50 per cent of gross produce and it was only the poor insecure tenants or sharecroppers who paid it
- The tenant often ended up bearing the cost of the production inputs either fully or to a substantial extent.
- The Green Revolution which started in some parts of India in the late 1960s aggravated the problems, with land values and rentals rising further.
- The acquisition of ownership rights by tenants was achieved only partially.
- Tenants hardly had any motivation to try and acquire full ownership which would involve not only raising capital but legal and other complications.



3. Weaknesses in Land Ceiling Legislation:-

- The **long delay and the nature of the legislation**, ensured that the ceilings would have a very muted impact as by the time the ceiling legislations were in place, there were barely any holdings left above the ceiling .
- Post independence India had more than 70 per cent of landholdings in India under 5 acres so the ceiling fixed on existing holdings by the states were very high.
- In most states **the ceilings were imposed on individual and not family holdings**, enabling landowners to divide up their holdings in the names of relatives or make benami transfers merely to avoid the ceiling.
- Further, **in many states the ceiling could be raised** if the size of the family of the landholder exceeded five.
- A large **number of exemptions to the ceiling limits** were permitted by most states following the Second Plan recommendations that certain categories of land could be exempted from ceilings.
 - The exemptions were often carried to absurd limits with Tamil Nadu reportedly permitting twenty -six kinds of exemptions
- Exemption to land held by cooperatives was open to great misuse with landlords transferring their lands to bogus cooperatives.
- The ceiling laws led to at least some landowners shifting to direct efficient farming in order to avoid alienation of their lands.
- The landowners also resorted to mass eviction of tenants, resuming their lands at least up to the ceiling limit, and claimed to have shifted to progressive farming under their direct supervision.
 - In fact, despite the ceiling legislations which were passed by most states by 1961, till the end of 1970 not a single acre was declared surplus in large states like Bihar, Mysore, Kerala, Orissa and Rajasthan.

4. Digitization of land records failed :-

- **Insufficient data:-**
 - Although the government wants complete digitisation of land records, due to the lack of clear and sufficient data and mismanagement between the various agencies handling land records, the data registered at various government levels is not identical.
- Statistics from the DILRMP show that in most states, **the digital land record database has not been synced with the digitised land registration database.**
- **Experience from states:-**
 - Progress over the past decade has been uneven, with some states, such as Madhya Pradesh, Andhra Pradesh, Telangana, Chhattisgarh, Tamil Nadu and Maharashtra, doing better than the others. However, there are challenges, even in advanced states such as Maharashtra.
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- **Illiteracy :-**
 - some of them are using the old methods of cultivation.
- **Lack of Capital :-**
 - The co-operative farming societies are also facing the capital shortage problem and these are unable to meet the growing needs of agriculture. Credit facilities to these societies are also not sufficient.



▪ **Re-Payment of Debt :-**

- Sometimes debt is not re-paid in time which creates many problems for the financial institutions. Some members do not realize their responsibility and it becomes the cause of failure.

However measures are being taken now :-

- Nitit aayog came up with the Model Agricultural Land Leasing Act, 2016. The model Act seeks to permit and facilitate leasing of agricultural land to improve access to land by the landless and marginal farmers. It also provides for recognition of farmers cultivating on leased land to enable them to access loans through institutional credit.
- The National Land Records Modernization Programme (NLRMP) was launched by the Government of India in August 2008, aimed to modernize management of land records, minimize scope of land/property disputes, enhance transparency in the land records maintenance system, and facilitate moving eventually towards guaranteed conclusive titles to immovable properties in the country.
- Currently land acquisition is governed by the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 which came into force on January 1, 2014. Prior to this, the Land Acquisition Act, 1894 governed land acquisition.
- Some of the most interesting work of **sorting out the land titling mess** has been done by state governments, as has been the case with **labour law reforms** as well.
 - First, the **Bhoomi Project in Karnataka** led the way even before the Union government got into the act. The state government began to **digitize land records** at the turn of the century.
 - Second, the Rajasthan legislature passed the **Rajasthan Urban Land (Certification of Titles) Act in April 2016**.
 - Third, **Andhra Pradesh** has taken a leap into the future. Its state government has tied up with a Swedish **firm to use new blockchain technology to prevent property fraud**.

Topic: Infrastructure: Energy, Ports, Roads, Airports, Railways etc., Investment Models.

Q) Discuss the problems faced by the power sector in India and give suggestions on what needs to be done to better the situation ? (250 words)

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Why this question

Rising NPA in coal and power sector are issues that are bothersome for India for these sector are very important for industrial progress of India. The report of Parliamentary committee identifying the problems in the sector is important and needs preparation.

Key demand of the question

The question expects us to highlight the status quo of power sector, analyze the problems faced by them and discuss way forward.

Directive word

Discuss – This is an all-encompassing directive – you have to debate on paper by going through the details of the issues concerned by examining each one of them. You have to give reasons for both for and against arguments.

Structure of the answer

Introduction – Give a synopsis of the problems faced by power sector.

Body

Discuss the issues faced by the sector such as low availability of coal and other problems highlighted by the Parliamentary standing committee.

Discuss the actions taken so far and the impact of such actions Special linkages for some entities by Coal India; The recent move to allow cost pass-through to some entities to relieve them of the burden of increased import price.

Discuss the way forward taking inputs from the views of the article along with your views



Conclusion – Harp on the importance of power sector and the need for reforms in the sector.

Background:-

- India's power sector is one of the key sectors which form the foundation of the growth of the country. Despite the fact that India has surplus energy, it is facing huge problems which serve as an obstacle for supplying electricity to all needy people.

Problems faced by power sector:-

- The troubles of power companies can be traced to **structural issues** such as the
 - Absence of meaningful price reforms
 - Unreliable fuel supply and
 - The unsustainable finances of public sector power distribution companies.
- Stressed accounts:-**
 - Power sector, which has around 34 stressed accounts worth Rs 1.8 lakh crore, is the biggest worry for the banks since resolution through IBC will erode the true value of assets. This can lead to more bottlenecks in projects as well as operations.
- The Standing Committee on Energy** observed that development in the power sector has not been balanced.
 - While delicensing generation helped **increased generation activities**, the other segments (transmission and distribution) have not been given much attention.
- The Electricity Policy does **not look into the issues** around clearances, land acquisition, continuance of old and inefficient plants, instability in FSA policies, and other regulatory challenges and delays.
- Cost of supply :-**
 - Electricity distribution companies (discoms) in some States (Seven States (Uttar Pradesh, Bihar, Odisha, Jharkhand, Assam, Rajasthan and Madhya Pradesh)) are already highly indebted. Their debts account for 17% of accumulated liabilities of the States.
 - Despite continued State subvention (except by Odisha), **all these discoms have been consistently running at a loss, accounting for about 47% of the loss in electricity distribution business.**
 - Existing subsidised lifeline tariffs in these States appear unaffordable to the poor and certainly higher than in States with universal (or high) access.
 - Average plant load factor (PLF) across the country has fallen to a multi-decadal low of 58%. This implies inefficiency and extra burden of fixed costs.
- Coal:-**
 - Shortage of fuel for power plants has become very critical in recent months. Many of the coal mines sold off in auction, mandated by the Supreme Court verdict, are simply not operational.
 - Continued and increased dependence on imported coal points to deficiencies in augmenting domestic capacity.
 - Mining in a number of coal blocks was stuck up for want of clearances
- The Parliamentary Standing Committee has identified the following major reasons for the crisis:**
 - Insufficient number of power purchase agreements (PPAs) made available by states
 - Inability of the promoters to infuse equity and working capital.
 - Contractual and tariff-related disputes.
 - Delays in project implementation, leading to cost overruns.
- Measures taken are not sufficient :-**
 - The focus, so far, has been to grapple with some of the issues for select few generating companies in the following manner:
 - Special linkages for some entities by Coal India;
 - The recent move to allow cost pass-through to some entities to relieve them of the burden of increased import price.
 - The grid balancing that could have been done through hydroelectric power for renewable energy is now being "enforced" on coal-based power plants.

Way forward:-

- Standing committee on energy recommended that the process of grant of loan, supervisory mechanism and its subsequent monitoring should be revisited.
- Supply of coal** will have to be increased by Coal India by following a strategy pursued during 2014-15 and 2015-16, when coal production saw an unprecedented increase



- **Set up a high-level** empowered committee to examine each stressed project and work out a rehabilitation package. Only financial restructuring will not help. The package has to be a comprehensive one. This could even entail change of ownership/management and/or adequate sanction of funds that are required for the projects.
- **Power-generating** companies should not be saddled with the burden of cross-subsidising the renewable sector. This can be borne by the society (through taxation) and not by the entities that are already in trouble.

Q) Critically analyze the hybrid annuity model which has recently found favour with the government for road construction ? (250 words)

Key demand of the question

Here, we first need to explain hybrid annuity model, explain how it differs from the earlier toll model or annuity model. Thereafter, we need to bring out its pros and cons and give a fair and balanced opinion on whether the use of this model would start attracting private capital for road construction purposes.

Directive word

Critically analyze – When asked to analyze, you have to examine methodically the structure or nature of the topic by separating it into component parts and present them as a whole in a summary. When ‘critically’ is suffixed or prefixed to a directive, all you need to do is look at the good and bad of something and give a fair judgement.

Structure of the answer

Introduction – *highlight that the government has recently awarded the construction of several road projects on hybrid annuity model.*

Body

Explain the model – is a mix of the EPC (engineering, procurement and construction) and BOT (build, operate, transfer) models. Hybrid Annuity Model (HAM) combines EPC (40 per cent) and BOT-Annuity (60 per cent).

NHAI releases 40 per cent of the total project cost. It is given in five tranches linked to milestones. The balance 60 per cent is arranged by the developer. Here, the developer usually invests not more than 20-25 per cent of the project cost (as against 40 percent or more before), while the remaining is raised as debt.

Discuss the advantages that it offers such as

- *NPA-riddled banks were becoming wary of lending to these projects.*
- *spreads the risk between developers and the Government*
- *helps cut the overall debt and improves project returns etc*

Discuss the issues such as it doesn't take care of the cost and time overruns due to issues of administrative efficiency etc

- *Highlight how the model can be made better with steps such as efficient dispute redressal mechanism, faster environmental clearances etc*

Conclusion – *Give a fair and balanced opinion on hybrid annuity model and discuss way forward for this model.*

Background :-

- In recent years, the government has extensively adopted the public private partnership (PPP) approach in road development. Today, India has the distinction of having the largest PPP programme globally in the roads sector.
- Private investment in highway projects had been declining in recent years, amid issues such as slow project approvals and cost overruns, but the Indian government's introduction of the hybrid annuity model (HAM) in 2016 has been a boon.



Hybrid annuity model :-

- HAM is a mix between the existing two models – BOT Annuity and EPC. As per the design, the government will contribute to 40% of the project cost in the first five years through annual payments (annuity). The remaining payment will be made on the basis of the assets created and the performance of the developer.
- Here, hybrid annuity means the first 40% payment is made as fixed amount in five equal installments whereas the remaining 60% is paid as variable annuity amount after the completion of the project depending upon the value of assets created.
- As the government pays only 40%, during the construction stage, the developer should find money for the remaining amount. Here, he has to raise the remaining 60% in the form of equity or loans.
- There is no toll right for the developer. Under HAM, **Revenue collection would be the responsibility of the National Highways Authority of India (NHAI).**

Why HAM needs to be adopted:-

- **High costs:-**
 - Estimated project costs have significantly escalated in the case of toll projects, hitting the project economics.
- **Toll projects are not sufficiently ready at the time of bidding, hinting at insufficient planning.** This results in the private sector assuming or handling much of the pre-development phase risks such as clearances, land acquisition, and so on, leading to increases in cost overruns.
- **Large number of stalled projects** are blocking infrastructure projects and at the same time adding to NPAs of the banking system.
- **HAM arose out of a need to have a better financial mechanism for road development:-**
 - The BOT model ran into roadblocks with private players not quite forthcoming to invest.
 - First of all, the private player had to fully arrange for its finances be it through equity contribution or debt.
 - NPA-riddled banks were becoming wary of lending to these projects.
 - Also, if the compensation structure didn't involve a fixed compensation (such as annuity), developers had to take on the entire risk of low passenger traffic.
- **Advantages of HAM:-**
 - HAM is a good trade-off, spreading the risk between developers and the Government. Here, the government pitches in to finance 40 per cent of the project cost which is a sort of viability-gap funding. **This helps cut the overall debt and improves project returns.**
 - The annuity payment structure means that the developers aren't taking 'traffic risk'. From the Government's perspective, **it gets an opportunity to flag off road projects by investing a portion of the project cost.**
 - While it does take the traffic risk, **it also earns better social returns by way of access and convenience to daily commuters.**
 - It gives enough **liquidity to the developer and the financial risk** is shared by the government. While the private partner continues to bear the construction and maintenance risks as in the case of BOT (toll) model, he is required only to **partly bear the financing risk.**
 - HAM further reduces heavy dependence on banks for loans as private players can raise the required amount from equity. This helps reduce the proportion of debt and further reduces the risks banks take for non-performing assets (NPA) with longer maturation periods.
 - A change in the financial framework of HAM model has enabled faster disbursement of funds and timely completion of projects. By completing projects within the stipulated time period, developers are able to reduce their construction costs including machinery and labour charges to a great extent. The interest to be paid to lenders during construction is also reduced.
- The hybrid annuity model (HAM) to award road projects has encouraged investments in the sector according to Moody's.

Some concerns are raised :-

- The hybrid annuity model (HAM) for highway construction is not sustainable, particularly given the already existing stress in the sector.
- Reason behind the HAM being not sustainable was that developers today didn't have the deep pockets they had 10 years back.
- Funding is becoming a challenging task for road developers.

**Conclusion:-**

- The model can be made better with steps such as efficient dispute redressal mechanism, faster environmental clearances etc.

Q) Discuss the impact of GST on infrastructure sector. Suggest measures to be taken by the government to boost growth in infrastructure sector in India. (250 words)

Key demand of the question

The question is quite straightforward in its demand. It expects us to discuss the pros and cons of GST on infrastructure sector and list out the steps taken by government to boost the sector

Directive word

Discuss – This is an all-encompassing directive – you have to debate on paper by going through the details of the issues concerned by examining each one of them. You have to give reasons for both for and against arguments.

Structure of the answer

Introduction – mention that Infrastructure is the backbone of Indian economy with total infrastructure spending is expected to be about 10% of GDP.

Body

Explain how would GST impact the infrastructure sector. Bring out the pros and cons

Pros

- *No more cascading burden of taxes*
- *Valuation of goods and services in works contracts would now be put to rest as works contracts would be regarded as supply of services.*
- *expected to enable a reduction in logistics cost by as much as 20 per cent to 30 per cent, as firms reconfigure their supply chains*

Cons

- *Exemptions and concessions to infrastructure have been completely withdrawn. This could also lead to increased working capital requirements.*
- *Electricity being outside the purview of GST, power generation companies would continue to have indirect taxes as a significant cost factor.*

Measures taken by the govt to boost infrastructure sector such as Kelkar committee recommendations etc

Conclusion – *Mention that India needs to develop a better regulatory mechanism, a rational pricing system, reform financial markets and strengthen dispute resolution mechanisms so that the private sector finds infrastructure projects economically feasible.*

Background:-

- The infrastructure sector is the backbone of the Indian economy. The government has been making efforts to boost the sector through various schemes and incentives.
- According to the government, total infrastructure spending is expected to be about 10% of GDP (gross domestic product) during the 12th Five-Year Plan (2012–17).

Impact of GST on infrastructure sector :-

- **Positive:-**
 - GST being a concurrent tax on supply of goods and services is expected to bring in **predictability for infrastructure projects.**
 - Valuation of goods and services in works contracts would now be put to rest as works contracts would be regarded as supply of services.



- While there is apprehension that a flat GST rate of 18% would lead to increased incidence on infrastructure projects, **availability of input tax credits would neutralize such concerns. Thus, contractors and suppliers could look forward to a simpler and efficient tax regime.**
- Expected to boost the infrastructure sector **with the elimination of 'tax on tax' and the introduction of input tax credit (ITC).**
- It will bring down the logistics costs
- **It streamlines the tax system which can lead to increase in investments.**
- **Negatives :-**
 - **Cost:**
 - Credit restrictions on works contracts resulting in an immovable property coupled with increase in GST rates could increase cost outlay.
 - Already, exemptions and concessions to infrastructure have been completely withdrawn. This could also lead to increased working capital requirements. Project cost could rise due to increased burden of indirect taxes.
 - **Power is an important component of infrastructure:-**
 - Electricity being outside the purview of GST, power generation companies would continue to have indirect taxes as a significant cost factor.
 - Further, an increase in rate of services and withdrawal of exemptions and concessions for power projects is expected to have an impact on power companies.
 - These provisions will increase **the compliance costs for construction companies**
 - GST would require contractors to register in multiple states owing to the requirement of registering at the place of supply of service. Contractors would also have to compulsorily register in a state where it supplies services but has no fixed place of business, owing to the concept of "casual taxable person". **These provisions will increase the compliance costs for construction companies.**
 - Furthermore, companies will have to incur the costs of upgrading their IT systems, as input credit would be available only after an online reconciliation of tax invoices.
 - **With the advent of GST, there will also be a change in the cost of construction materials.** For example, a higher GST rate of 28% imposed upon cement would adversely impact construction cost.

How to boost growth in infrastructure sector :-

- India and Japan have joined hands for infrastructure development in India's north-eastern states and are also setting up an India-Japan Coordination Forum for Development of North East to undertake strategic infrastructure projects in the northeast. Such projects can give impetus to the infrastructure sector.
- India needs to develop a better regulatory mechanism, a rational pricing system, reform financial markets and strengthen dispute resolution mechanisms so that the private sector finds infrastructure projects economically feasible.
- The Kelkar Committee had noted that inefficient and inequitable allocation of risk can be a major factor leading to failure of PPPs. PPP contracts should ensure optimal risk allocation across all stakeholders.
- There is a need for independent regulatory body in roads as the current arrangement at the centre and the states results in a potential conflict since the rule making body is also the implementing body
- **Key Recommendations: Sam Pitroda Panel on Railway Modernization**
 - Signalling is archaic so there is need to stress on Complete **upgradation of railway's communication system**
 - **A centralized train monitoring system right from rail bhawan.**
 - **Explore PPP**
- **Ports:-**
 - India needs to revamp institutional and regulatory environment around ports.
 - Corporatisation of ports is one way of achieving efficient and world class ports by the conversion of major port trusts into truly commercial organisations.
 - In terms of **infrastructure**, it is important to maintain **draft to serve bigger vessels, ensure mechanisation of ports through introduction of new equipment and procedures**, build new facilities, upgrade existing facilities and automate systems/procedures.



Q) Examine the developments of Airports in India through Joint Ventures under Public-Private Partnership (PPP) model. What are the challenges faced by the authorities in this regard ? (250 words)

Key demand of the question

The question expects us to discuss the evolution of PPP in airport sector, explain the issues involved therein and challenges faced. Finally we need to highlight the way forward.

Directive word

Examine – When you are asked to examine, you have to probe deeper into the topic, get into details, and find out the causes or implications if any.

Structure of the answer

Introduction – Write about importance of airports and general development through PPP

Body

Highlight that the privatization of Indian airports was set in motion way back in 1999, when a greenfield airport was set up in Cochin under the PPP route. Followed by airports of Bangalore and Hyderabad in 2004. In 2006, the aviation ministry signed concession agreements with GMR and GVK for expansion and modernization of New Delhi and Mumbai international airports. Thereafter, the privatization process was grounded following global economic slowdown, opposition by AAI employees, etc

Explain that Even though the privatization route has allowed development of efficient world class airports in India and has fueled the growth of air traffic in India, not all are in favor of it. Especially employees of AAI, who fear losing their jobs when private developers take over.

Discuss the challenges faced by the authority such as increased charges at airport, issues in concessionaire agreements etc

Conclusion – Mention that government in budget has launched Nabh Nirman scheme for development of airport, wherein the issues discussed above need to be resolved.

Background:-

- The civil aviation industry in India has emerged as one of the fastest growing industries in the country during the last three years. India is currently considered the third largest domestic civil aviation market in the world.
- Public-Private Partnerships (PPPs) have emerged as an innovative way to pool the resources of governments and private companies in order to achieve these development goals.

Why did India go for PPP model?

- **Inadequate infrastructure capacity to meet growing demand at the time :-**
 - In the early 90's the government and Airport Authority of India (AAI) had invested substantial resources in the development of airport and navigation services infrastructure. However, this was a significant strain on Government finances, more so as the aviation sector had not taken off.
 - This gap in supply-demand necessitated the influx of private capital to build capacity and drive traffic.
- **Using Private Capital to supplement Public Investment**
 - Under the tenets of the Chicago Convention, ownership and management of airports and air navigation services may be delegated to the private sector. Using this the Government of India embarked upon a massive privatisation exercise.

PPP model in aviation sector :-

Date	Chronology of Events
1994	Airports Authority of India Act, 1994 (AAI Act) amended, allowing inter alia carrying out airport related activities through Public-Private Partnership (PPP) model, except for certain reserved activities such as air traffic control, security, customs etc.
1999	Privatization of Indian airports was set in motion way back in 1999, when a greenfield airport was set up in Cochin under the PPP route. Followed by airports of Bangalore and Hyderabad in 2004.



2007-10	Concession Agreements, Operationalization of Airports. Aviation ministry signed concession agreements with GMR and GVK for expansion and modernization of New Delhi and Mumbai international airports.
2008	The Airports Economic Regulatory Authority (AERA) Act was notified, clearing the way for an independent regulator to be established for economic regulation of major airports
2009	Powers and functions of the Airports Economic Regulatory Authority (AERA) were notified
2016–17	National Civil Aviation Policy – notified, Upcoming Airports in Goa (Mopa) and Navi Mumbai The new National Civil Aviation Policy is a testament to the commitment of the Indian Government towards the aviation sector, and has resulted in the reduction of regulatory uncertainty and ambiguity, through the standardization of critical elements of the PPP structure

Positives:-

- Recourse to the Public Private Partnership (PPP) model has boosted private sector investments in airports
- PPP route for five international airports (Delhi, Mumbai, Cochin, Hyderabad, Bengaluru) most noteworthy
- In Union Budget 2017, Government of India has decided to develop select airports in tier 2 cities under PPP model in order to attract investments from private players.
- Presently India has 5 PPP airports each at Mumbai, Delhi, Cochin, Hyderabad and Bengaluru, which together handle over 55 per cent of country's air traffic.

Challenges faced by the authorities:-

- Increased charges at PPP airports have certainly been a contentious issue for airlines.
- A clear process has not been established for determining the appropriate level of capital expenditure in airports and for monitoring project costs to prevent the massive budget over-runs that have occurred in some cases and which have simply been recouped through higher charges that are borne by the airlines and passengers.
- **AAI and infrastructure plan**
 - The new policy is also silent on the need for complete transformation of the Airports Authority of India (AAI).
 - Experts opine that AAI focuses heavily on capital expenses. Moreover, without a clear infrastructure plan, the expected job creation is not likely to happen.
- Employees of AAI fear losing their jobs when private developers take over.

Way forward:-

- The industry stakeholders should engage and collaborate with policy makers to implement efficient and rational decisions that would boost India's civil aviation industry. With the right policies and relentless focus on quality, cost and passenger interest, India would be well placed to achieve its vision of becoming the third-largest aviation market by 2026.
- In order to provide a big push to the country's civil aviation sector, the Budget 2018 announced the NABH Nirman initiative. This new scheme aims to increase the number of Airports and their capacity to handle traffic. Such schemes need to be implemented.

Q) Explain the difference toll and annuity model in PPP projects? Critically analyze whether adopting the hybrid annuity model for road construction would resolve issues associated with PPP projects ? (250 words)

[livemint](#)

Why this question

The article very lucidly explains the difference between toll and annuity model of PPP projects and examines whether resorting to hybrid annuity model would resolve the issues faced by road construction sector. It also remains to be seen whether this move attracts private investment which had decreased post the problems with the previous concessionaire agreements became apparent. Hence this question would help you in examining all these issues in detail.

Key demand of the question

In the first part of the question, we need to discuss the differences between toll model and annuity model of PPP projects. Thereafter, we need to explain hybrid annuity model which has now found



favour with the policy makers. Next, we need to critically analyze whether this would resolve the issue. We need to provide a fair and balanced conclusion and discuss way forward.

Directive word

Critically analyze – When asked to analyze, you have to examine methodically the structure or nature of the topic by separating it into component parts and present them as a whole in a summary. When ‘critically’ is suffixed or prefixed to a directive, all you need to do is look at the good and bad of something and give a fair judgement.

Structure of the answer

Introduction – *Highlight that India has awarded the highest number of road projects among all countries through PPP. Explain that this is to leverage advantages and name the three popular models of PPP ie toll, annuity and hybrid annuity.*

Body

Explain the difference between toll and annuity model. Use points from the article and based on your own reading.

Thereafter, explain what happens under hybrid annuity model and what advantages it provides over the model discussed previously. Government would provide upfront around 40% of the project cost to developer to start the work and remaining 60% would be borne by the private player. Once the project is completed, the NHAI will collect toll and refund the private players in instalments for 15-20 years. This implies that the toll collection job will be done by NHAI.

Explain that this model is being cited beneficial because of the following: Compared to the BOT Annuity / EPC projects, it would ease the cash flow pressure on the government. Compared to BOT Toll model, the traffic risk is not associated with the concessionaire, it gives him some comfort level to lend from the banks.

Point out the counter argument provided in the article

Conclusion – *Give a fair and balanced view and discuss the way forward.*

Background :-

- In recent years, the government has extensively adopted the public private partnership (PPP) approach in road development. Today, India has the distinction of having the largest PPP programme globally in the roads sector.
- PPP road projects broadly fall in one of the two categories of toll or annuity, though many recent projects are being implemented under a hybrid annuity model.

Toll model :-

- With more than 75% of the PPP projects being implemented using the toll model, it remains the preferred approach for policy makers.

Differences between toll model and Annuity model:-

- **Toll and annuity projects vary mainly in the way the developers recoup their investment.**
 - In the former, the road developer collects toll from the users
 - In the case of the latter, the developer receives predefined annuity payments from the government.
 - While the private developer assumes the demand risk in toll projects, it is not the case with annuity projects.
- Basic difference between the toll and annuity projects is in the **risk-reward equation**.
 - In the case of annuity projects, the developer does not assume any demand risk, but the upside is capped.
 - However, in toll projects, the private developer assumes the demand risk, but would also benefit if the traffic growth is more than what is assumed.
- **Financial parameters:-**
 - **Toll projects in general are characterized by longer stretches, and therefore higher project costs. They also have more structures as compared to annuity projects,** indicating that they could have a higher degree of complexity.
 - The estimated unit project costs are lower in toll projects, indicating that developers are able to achieve economies of scale associated with longer stretches. The average value of state domestic product indicates that toll projects are seen in those states that are more developed and where economic activity is higher, indicating the possibility of higher toll collections.



- It shows that annuity projects have higher debt levels indicating that lenders perceive a lower risk in such projects.
- **The toll projects are not as investment ready at the time of project award as compared to that of annuity projects.**

Hybrid annuity model :-

- HAM is a mix between the existing two models – BOT Annuity and EPC. As per the design, the government will contribute to 40% of the project cost in the first five years through annual payments (annuity). The remaining payment will be made on the basis of the assets created and the performance of the developer.
- Here, hybrid annuity means the first 40% payment is made as fixed amount in five equal installments whereas the remaining 60% is paid as variable annuity amount after the completion of the project depending upon the value of assets created.
- As the government pays only 40%, during the construction stage, the developer should find money for the remaining amount. Here, he has to raise the remaining 60% in the form of equity or loans.
- There is no toll right for the developer. Under HAM, **Revenue collection would be the responsibility of the National Highways Authority of India (NHAI).**

Why HAM needs to be adopted:-

- **High costs:-**
 - Estimated project costs have significantly escalated in the case of toll projects, hitting the project economics.
- **Toll projects are not sufficiently ready at the time of bidding, hinting at insufficient planning.** This results in the private sector assuming or handling much of the pre-development phase risks such as clearances, land acquisition, and so on, leading to increases in cost overruns.
- **Large number of stalled projects** are blocking infrastructure projects and at the same time adding to NPAs of the banking system.
- **HAM arose out of a need to have a better financial mechanism for road development:-**
 - The BOT model ran into roadblocks with private players not quite forthcoming to invest.
 - First of all, the private player had to fully arrange for its finances be it through equity contribution or debt.
 - NPA-riddled banks were becoming wary of lending to these projects.
 - Also, if the compensation structure didn't involve a fixed compensation (such as annuity), developers had to take on the entire risk of low passenger traffic.
- **Advantages of HAM:-**
 - HAM is a good trade-off, spreading the risk between developers and the Government. Here, the government pitches in to finance 40 per cent of the project cost which is a sort of viability-gap funding. **This helps cut the overall debt and improves project returns.**
 - The annuity payment structure means that the developers aren't taking 'traffic risk'. From the Government's perspective, **it gets an opportunity to flag off road projects by investing a portion of the project cost.**
 - While it does take the traffic risk, **it also earns better social returns by way of access and convenience to daily commuters.**
 - It gives enough **liquidity to the developer and the financial risk** is shared by the government. While the private partner continues to bear the construction and maintenance risks as in the case of BOT (toll) model, he is required only to **partly bear the financing risk.**

Some concerns are raised :-

- The hybrid annuity model (HAM) for highway construction is not sustainable, particularly given the already existing stress in the sector.
- Reason behind the HAM being not sustainable was that developers today didn't have the deep pockets they had 10 years back.
- Funding is becoming a challenging task for road developers

Q) Infrastructure development has witnessed significant impetus in India in the recent years. Discuss. (250 words)

Reference



Why this question

India needs a huge corpus of investment in order to cope up for its infrastructure deficits. The sector has witnessed moderate growth recently and the government has also initiated various steps to boost investment in infrastructure sector.

Directive word

Discuss- this is an all-encompassing directive which mandates us to write in detail about the key demand of the question. we also have to discuss about the related and important aspects of the question in order to bring out a complete picture of the issue in hand.

Key demand of the question.

The question wants us to write in detail about the status of infrastructure growth in India and bring out in detail the impetus received by the sector recently.

Structure of the answer

Introduction– write a few introductory lines about India’s infrastructure sector- Infrastructure sector is a key driver for the Indian economy. The sector is highly responsible for propelling India’s overall development and enjoys intense focus from Government for initiating policies that would ensure time-bound creation of world class infrastructure in the country. Infrastructure sector includes power, bridges, dams, roads and urban infrastructure development. I

Body-

Discuss the impetus received by the sector in recent years. E.g In 2016, India jumped 19 places in World Bank’s Logistics Performance Index (LPI) 2016, to rank 35th amongst 160 countries; Foreign Direct Investment (FDI) received in Construction Development sector (townships, housing, built up infrastructure and construction development projects) from April 2000 to June 2018 stood at US\$ 24.87 billion, according to the Department of Industrial Policy and Promotion (DIPP). The logistics sector in India is growing 10 per cent annually and is expected to reach US\$ 215 billion in 2019-20; the Asian Infrastructure Investment Bank (AIIB) has announced US\$ 200 million investment into the National Investment & Infrastructure Fund (NIIF); Massive push to the infrastructure sector by allocating Rs 5.97 lakh crore (US\$ 92.22 billion) for the sector, in budget 2018-19; mention about some of the major infrastructure development projects in the country like the Sahaj Bijli Har Ghar Yojana (Saubhagya) scheme, which aims to achieve universal household electrification in the country; Green Energy Corridor Project along with other wind and solar power projects; smart cities mission; Pradhan Mantri Awas Yojana etc.

Conclusion- based on your discussion, form a fair and a balanced conclusion on the given issue.

Background :-

- Infrastructure sector is a key driver for the Indian economy. The sector is highly responsible for propelling India’s overall development and enjoys intense focus from Government for initiating policies that would ensure time-bound creation of world class infrastructure in the country.

Infrastructure sector has witnessed significant impetus in recent years:-

- **Market Size**
 - Foreign Direct Investment (FDI) received in Construction Development sector from April 2000 to June 2018 stood at US\$ 24.87 billion, according to the Department of Industrial Policy and Promotion (DIPP).
 - The logistics sector in India is growing 10 per cent annually and is expected to reach US\$ 215 billion in 2019-20.
- **Investments**
 - India has a requirement of investment worth Rs 50 trillion in infrastructure by 2022 to have sustainable development in the country. India is witnessing significant interest from international investors in the infrastructure space. Some key investments in the sector are listed below.
 - In June 2018, the Asian Infrastructure Investment Bank (AIIB) has announced US\$ 200 million investment into the National Investment & Infrastructure Fund (NIIF).
 - Indian infrastructure sector witnessed 91 M&A deals worth US\$ 5.4 billion in 2017



Government Initiatives

- The Government of India is expected to invest highly in the infrastructure sector, mainly highways, renewable energy and urban transport.
- Announcements in Union Budget 2018-19:
 - Massive push to the infrastructure sector by allocating Rs 5.97 lakh crore for the sector.
 - Rs 16,000 crore towards Sahaj Bijli Har Ghar Yojana (Saubhagya) scheme. The scheme aims to achieve universal household electrification in the country.
 - Rs 4,200 crore to increase capacity of Green Energy Corridor Project along with other wind and solar power projects.
 - Allocation of Rs 10,000 crore to boost telecom infrastructure.
 - A new committee to lay down standards for metro rail systems was approved in June 2018. As of August 2018, 22 metro rail projects are ongoing or are under construction
 - The Government of India is working to ensure a good living habitat for the poor in the country and has launched new flagship urban mission, the Pradhan Mantri Awas Yojana (Urban).
 - In May 2018, construction of additional 150,000 affordable houses was sanctioned under Pradhan Mantri Awas Yojana (PMAY), Urban.

Latest update: November, 2018



Way forward :-

- India and Japan have joined hands for infrastructure development in India's north-eastern states and are also setting up an India-Japan Coordination Forum for Development of North East to undertake strategic infrastructure projects in the northeast. Such projects need to be implemented soon.

Q) Our policy needs to shift focus from universal electricity connections to upgradation of quality of supply and services. Comment. (250 words)

[epw](#)

Why this question

India has recently achieved universal electrification after electrifying the last unelectrified village of India. However, it needs to be discussed as to why electrification alone will not solve India's problems.

Directive word

Comment- here we have to express our knowledge and understanding of the issue and form an overall opinion thereupon.

Key demand of the question.

The question wants us to express our knowledge and understanding of the issue in terms of forming an opinion for or against the statement. We have to justify the need to upgrade supply and electricity services along with the need to pursue universal electricity connections.



Structure of the answer

Introduction– write a few introductory lines about the recent achievement of India becoming universally electrified. E.g The government launched the Pradhan Mantri Sahaj Bijli Har Ghar Yojana (Saubhagya) for universal household electrification in September 2017 and subsequently announced the electrification of all Indian villages in April 2018.

Body-

Discuss the other issues which are faced by India and cannot be resolved by electrification alone. Bring out the need to improve supply and services associated with electricity. E.g despite steady progress in connections, much of the works envisaged for network investment and strengthening are yet to be completed; Lack of timely network investments jeopardises the provision of reliable, affordable power supply. Evaluation of rural electrification programmes also highlighted that the distribution transformers catering to villages had the capacity to support the load of only 10% of the households and thus the instances of overloading and transformer breakdowns were significant; Many of these supply and service quality issues, crucial to the sustainability of electrification efforts, have also been identified- Billing centres, repair houses away from villages, delays in billing leading to arrears and disconnection, voltage fluctuations, inadequate electrification of public spaces, unmetered connections, supply outages and low hours of supply etc; If supply is not affordable or the quality of supply and service is poor, it is likely that consumers will get disconnected. Poor quality of supply and service can also worsen the trust deficit between newly electrified consumers and the distribution companies (DISCOMs). This, in turn, would make programme implementation, increasing tariffs and even future metering and billing reforms challenging. Thus, if adequate attention is not given, such issues could impede the progress towards meaningful access to electricity, increase the possibility of the networks being disused or consumers resorting to power theft etc

Conclusion– based on your discussion, form a fair and a balanced conclusion on the given issue.

Background:-

- Significant progress has been made with respect to village electrification and providing electricity connections to rural households, for over a decade.
- As per official estimates, 100% village electrification and over 90% household connections have been achieved.
- Today, almost all villages have been connected to the grid and around 4,500 villages with 1.62 lakh BPL households have been covered under off-grid schemes

Universal electrification is not enough:-

- Despite steady progress in connections, **much of the works envisaged for network investment and strengthening are yet to be completed.**
- **Lack of timely network investments jeopardises the provision of reliable, affordable power supply.**
- Evaluation of rural electrification programmes also highlighted that the **distribution transformers catering to villages had the capacity to support the load of only 10% of the households** and thus the instances of overloading and transformer breakdowns were significant.
- **Quality:-**
 - There have been no concerted efforts to improve the quality of supply. While the connection challenge has been nearly addressed, supply and service quality issues still persist in the sector.
 - Poor quality of supply and service can also worsen the trust deficit between newly electrified consumers and the distribution companies (DISCOMs). This, in turn, would make programme implementation, increasing tariffs and even future metering and billing reforms challenging
- **Metering and billing issues:-**
 - In rural areas, evidences of supply being given without proper meters/meters are commonplace.
 - Consistent delays in billing increase the bill amounts through build-up of arrears, making it unaffordable for many consumers. This increases the likelihood of payment defaults leading to disconnection of supply.
 - Agencies implementing and regulating major rural electrification efforts, such as the Rural Electrification Corporation (REC), have not performed well in tracking the metering and billing status for newly electrified households even though these are crucial for retaining the connections.
- **Supply outages and low hours of supply :-**
 - Despite India claiming to have surplus power, many homes do not have reliable power supply.
 - Ministry of power reports 12–16 hours of supply in rural areas.



- Further, only 7%–10% rural locations receive supply during the full evening hours (5 pm to 11 pm).
- **Lack of affordable power:**
 - Many regulatory commissions provide concessionary tariffs to consumers who are identified as BPL. But, poor consumers if not identified as BPL are excluded from this benefit.
- **Safety concerns with growing connections:**
 - Accidents arising from electricity shocks and fires due to electricity short-circuits have been steadily increasing over the years and reports indicate that most of these accidents happen in rural areas.
 - Poor construction and maintenance of rural distribution network is an important reason for these accidents
- **Managing growing rural consumer base:**
 - In the first phase of RGGVY, rural franchisees were expected to manage distribution operations in newly electrified areas. However, most of them are not operational and DDUGJY does not envisage such franchisees.

What more needs to be done :-

- There is a **need to hold DISCOMs accountable** for monitoring of supply quality and operation and maintenance efforts in rural areas in order to ensure uninterrupted supply.
- There needs to be **innovation in tariff design** to encourage home-based or small enterprises in newly electrified villages.
- **Periodic tracking of newly electrified households and villages:**
 - There can also be periodic state-level and third-party evaluations of the programme based on this information. Such transparent and periodic tracking would go a long way in holding DISCOMs accountable for service.
- **Harnessing technology to monitor hours of supply:**
 - Independent monitoring of supply reliability, as demonstrated by efforts such as the Electricity Supply Monitoring Initiative (which monitors consumer level supply across locations in 22 states) can play a crucial role in making supply data publicly accessible and should be encouraged.
- **Holding DISCOMs accountable for the quality of rural electricity supply:**
 - Disbursal of rural electrification funds can also be subject to improvements in select supply quality parameters and not just based on capitalisation related project milestones. Thus, the sustainability of past investments should be considered during future grants disbursal.
 - MoP can prepare annual reports analysing progress and ranking of DISCOMs for rural electrification and rural quality of supply.
 - Electricity Regulatory Commissions can hold public reviews to hold DISCOMs accountable for rural electrification efforts and supply and service quality in a process similar to that of tariff determination.
 - District Electricity Committees (DECs) are to be set up to monitor progress of electrification works.
 - Ground pressure is needed to ensure that DISCOMs work to provide quality rural supply. Civil society groups can also take up independent studies on the quality of supply and service of newly electrified areas, using surveys, RTI (right to information) queries and public hearings.
- **Subsidy and tariff reforms:**
 - Need to explore options for providing low-cost power for rural supply such as allocation of low-cost captive coal blocks for rural households, provision of surplus power at concessional rates or the allocation of cheaper, depreciated plants.
- **Central agency to coordinate and monitor rural electrification efforts:**
 - There is also a need for long-term political attention and resource allocation. This should involve a transparent participatory approach with maximum inputs from the newly electrified community.

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

Q) What do you understand by precision medicine and how can it help in cancer treatment and other various chronic and life threatening diseases ? (250 words)

Reference

Why this question

The article discusses this novel method of precision medicine and how it can help in improving treatment of several chronic and life threatening diseases. UPSC in SnT section has a history of asking questions based on new developments in technology which come in news. Hence this question.



Key demand of the question

The question expects us to first explain what exactly precision medicine is, the scope and nature of its application. Thereafter, we need to explain how it will be useful in treatment of cancer and other types of ailments. If there are any gaps, or criticism of the technology, it needs to be discussed as well.

Structure of the answer

Introduction – Mention that as diseases are becoming deadlier, technology is also developing to deal with them in a better, more systematic and organised manner.

Body

- *Explain what precision medicine is – precision medicine is “an emerging approach for disease treatment and prevention that takes into account individual variability in genes, environment, and lifestyle for each person.” This approach will allow doctors and researchers to predict more accurately which treatment and prevention strategies for a particular disease will work in which groups of people. It is in contrast to a one-size-fits-all approach, in which disease treatment and prevention strategies are developed for the average person, with less consideration for the differences between individuals.*
- *Discuss the technologies that make precision medicine possible – best of micro-physiological systems and gene chip technology, to garner in-depth genomic data on growth status, metastatic potential, and environmental catalysts relating to tumours. Leveraging key insights from this data, it can predict treatment outcomes etc*
- *Discuss how will it be useful in treating cancer with advantages such as avoiding side effects, deciding dosages.*
- *Discuss limitations and benefits of this technology*

Conclusion – Give your view on how helpful this technology can become for treatment of deadly diseases.

Background :-

- Cancer has continued to baffle major research organisations, healthcare practitioners, and government bodies for decades. Estimates indicate approximately 9.6 million cancer-related deaths in 2018, amounting to 1 out of every 6 deaths globally.
- In India the number of people suffering from cancer is reported to be at around 2.5 million, with over 7 lakh new cases and 56 thousand deaths yearly. So precision medicine is seen as a solution to treat cancer and other diseases.

Precision medicine :-

- It is about devising a tailor-made treatment process for each patient with detailed specifics for the right drugs, doses, medication timing and course duration, by capturing data about his or her genetic coding, environment and lifestyle.
- Laying the groundwork for a participatory, predictive and preventive healthcare service delivery system, it offers an effective and scalable solution to today’s healthcare problems.
- Precision medicine focuses on specific treatments by getting to the root of the illness.
- This approach will allow doctors and researchers to predict more accurately which treatment and prevention strategies for a particular disease will work in which groups of people.
- It is in contrast to a one-size-fits-all approach, in which disease treatment and prevention strategies are developed for the average person, with less consideration for the differences between individuals.

How can it help in cancer treatment and other diseases :-

- **Customised treatment:-**
 - Inefficiency of the existing medical equipment to gain adequate information about the body’s response to drug treatment, genomic alterations of tumours and tumour recurrence patterns press the need to intertwine data processing with **customised cancer treatment planning**. With precision or personalised medicine possibly coming to the clinical table in a few years, this seems conceivable.



- Within the realm of cancer treatment, precision medicine applies **the best of micro-physiological systems and gene chip technology**, to garner in-depth genomic data on growth status, metastatic potential, and environmental catalysts relating to tumours
 - Leveraging key insights from this data, it can predict treatment outcomes, provide prognostic information and indicate predisposition, fundamentally changing the approach to cancer treatment.
- The concept is being explored for the treatment of various chronic and life-threatening diseases. Recent evolvment in bioinformatics such as next-generation sequencing (NGS) has also revitalised its efficacy in studying genetic alterations accurately thus making it ideal for targetting therapy for molecular cancerous tumours.
- **Researchers are beginning to change how they classify tumors due to precision medicine.** The genetics of some breast cancers, for instance, may be more like stomach tumors than other breast cancers. **With precision medicine, cancers that are genetically alike are treated similarly.**
- **Precision medicine helps health care providers better understand the many things including environment, lifestyle, and heredity that play a role in a patient's health, disease, or condition.** This information lets them more accurately predict which treatments will be most effective and safe, or possibly how to prevent the illness from starting in the first place. Drug treatment decisions for some diseases, like cystic fibrosis, is another example of precision medicine in action.

There are a number of issues to consider

- Currently, genetic mutation information that can guide medical decisions exists for only a small number of diseases and conditions but this is expanding rapidly
- It will take time for doctors to learn about and become comfortable with using this genetic information as a new tool for patient care
- There is some concern about privacy issues and how the genetic information might be used
- Many genetic tests are very expensive and health insurers are reluctant to cover them unless there is clear evidence that doing the test will benefit the patient. However, as the use of genetic testing becomes more common and better (tests are developed the price for tests should decrease.

Q) What were the objectives of the India-based Neutrino Observatory (INO)? Comment on the recent NGT decision to grant clearance for this project ? (250 words)

Reference

Why this question

The article discusses the recent NGT decision to grant approval to Indian National Observatory Project. INO is a project that would have immense advantages for science research but unfortunately the project has been in a state of limbo owing to public grievances, questions over its environmental impact etc. Now that clearance has been given to the project it is important to revise INO.

Key demand of the question

The question expects us to bring out the objectives of INO in the first part. Thereafter, it expects us to comment on NGT's decision to grant approval to this project, which means we have to first explain the controversy surrounding this project and discuss the impact of NGT's decision to grant clearance to this project.

Directive word

Comment – When you are asked to comment, you have to pick main points and give your 'opinion' on them based on evidences or arguments stemming from your wide reading. Your opinion may be for or against, but you must back your argument with evidences.

Structure of the answer

Introduction – Explain about INO project

Body

- *Discuss the objectives of INO such as Use in the study of neutrino produced by cosmic rays in the earth's atmosphere and having mass or not for measurement and experiment purposes, in the development of detector technology etc*



- *Bring out the controversies surrounding INO – like environmental issues and safety issues*
- *Comment on the impact of the NGT verdict as to how completion of the project would enable India to be at the forefront of research*

Conclusion – *Give your view on the decision and mention the way forward for the project.*

Background:-

- Recently Principal Bench of the National Green Tribunal (NGT) has upheld the environmental clearance earlier granted to the India based Neutrino Observatory (INO) project by the Ministry of Environment, Forests and Climate Change (MoEFCC).

Indian based neutrino observatory:-

- The India-based Neutrino Observatory (INO) Project is a multi-institutional effort aimed at building a world-class underground laboratory for non-accelerator based high energy and nuclear physics research in India.
- **Objectives:-**
 - **Primary** goal is to study the properties and interactions of weakly interacting, naturally occurring particles, called neutrinos.
 - It aims to use to understand some of the **unsolved mysteries** of the universe.

NGT made a good decision:-

- **Education:-**
 - A major benefit will be for schools and colleges in the region as the students interested in science can benefit from the outreach activities as well as doing projects at the lab.
 - The **establishment of the INO lab would have a huge impact on the higher education in India** in addition to various technological spin offs.
 - Efforts will be made to improve the infrastructure and academic standards of the surrounding schools as permitted by governing rules. Exhibitions and other similar facilities will be arranged to enhance the scientific spirit of the local youngsters, etc.
 - Students of science and technology within the country, particularly those residing in Tamil Nadu or neighbouring states, will have the opportunity to involve themselves in research involving cutting-edge science and technology.
- **Employment:-**
 - Gainful employment will be there for a small number of people by way of sourcing of services and daily needs for the INO facility and for the upkeep of buildings and landscapes.
- **Other areas:-**
 - It is envisaged that such an underground facility will develop into a centre for other studies as well, in physics, biology, geology, etc., all of which will make use of the special conditions that exist deep underground.
 - Apart from pursuing neutrino physics goals, the laboratory itself will greatly aid the development of detector technology and its varied applications (which have so far been in the areas of medical imaging).
 - **ICAL detector that will be installed in the INO laboratory will be the world's most massive detector.** Such an effort will involve INO-Industry interface in a big way, in issues related to mechanical structure, electronics and detector-related technology. It is being developed completely indigenously.

However some concerns are still raised by experts:

- **Environmental concerns:-**
 - Due to some objections such as the proposed location being just about 4.9 kilometers from the Madhikettan Shola National Park in Idukki district of Kerala.
 - The **explosives** used in **construction** are a threat to the highly sensitive ecology of the Western Ghats
- **Safety concerns:-**
 - Project has also been objected by local people on **safety consideration**. The project is suffering prolonged delay
 - The relevant radiation safety studies for carrying out the long baseline neutrino experiment in the second phase of INO have not been done
- **Other concerns:-**
 - There are further allegations that neutrinos are **radioactive particles**
 - The INO will double up the storage of **nuclear waste**
 - Some of the concerns voiced range from radiation, structural damage to the mountain to emission of hazardous chemicals.



Q) It is time for India to realise the potential of Blockchain and possess regulatory foresight to insure development of Blockchain. Discuss. (250 words)

[Livemint](#)

Why this question

The application and advantages of Blockchain for a country like India is immense, yet we do not have favourable environment in which Blockchain and its application can be researched and developed well. The advantages of Blockchain for India and the regulatory architecture around it needs to be discussed for SnT section of mains.

Key demand of the question

The question expects us to provide two answers

The advantages of Blockchain for India

The issues with the regulatory architecture and how to impede research and development of Blockchain

Directive word

Discuss – This is an all-encompassing directive – you have to debate on paper by going through the details of the issues concerned by examining each one of them. You have to give reasons for both for and against arguments.

Structure of the answer

Introduction – explain what is Blockchain and highlight its applications.

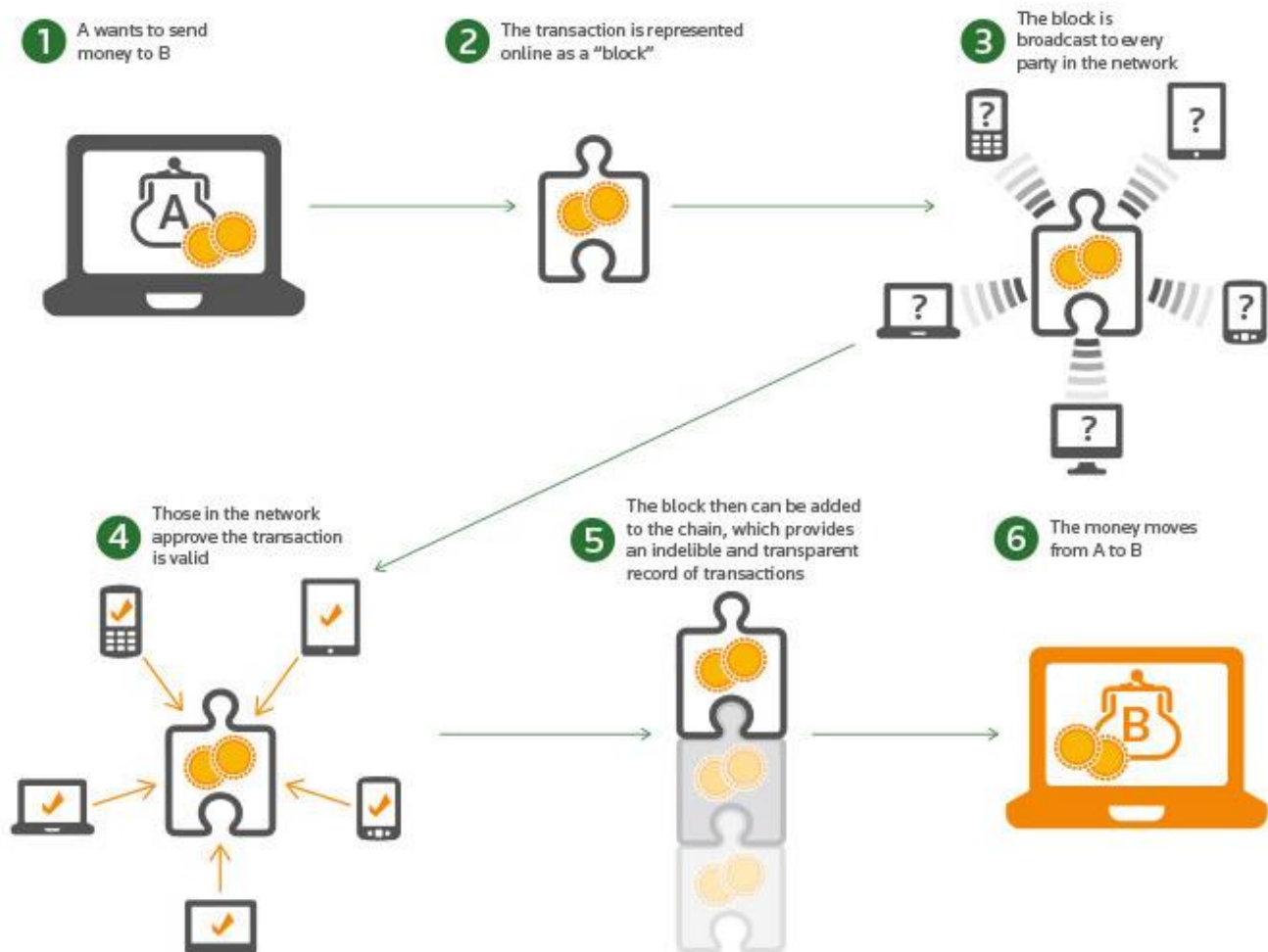
Body

- *Discuss the importance of blockchain for a country like India eg. Help in job creation, capital, solutions to India's problems and global strategic positioning.*
- *Discuss the policy architecture and issues in it – The current debate in India has, unfortunately, focused too heavily on trading and speculation, looking at cryptocurrencies as an investment tool, rather than understanding the potential of core blockchain technology and the basic role of cryptocurrencies as an incentive mechanism to secure decentralized transactions*
- *Discuss the pros and cons of this approach*

Conclusion – Give your view on what needs to be done and discuss way forward.

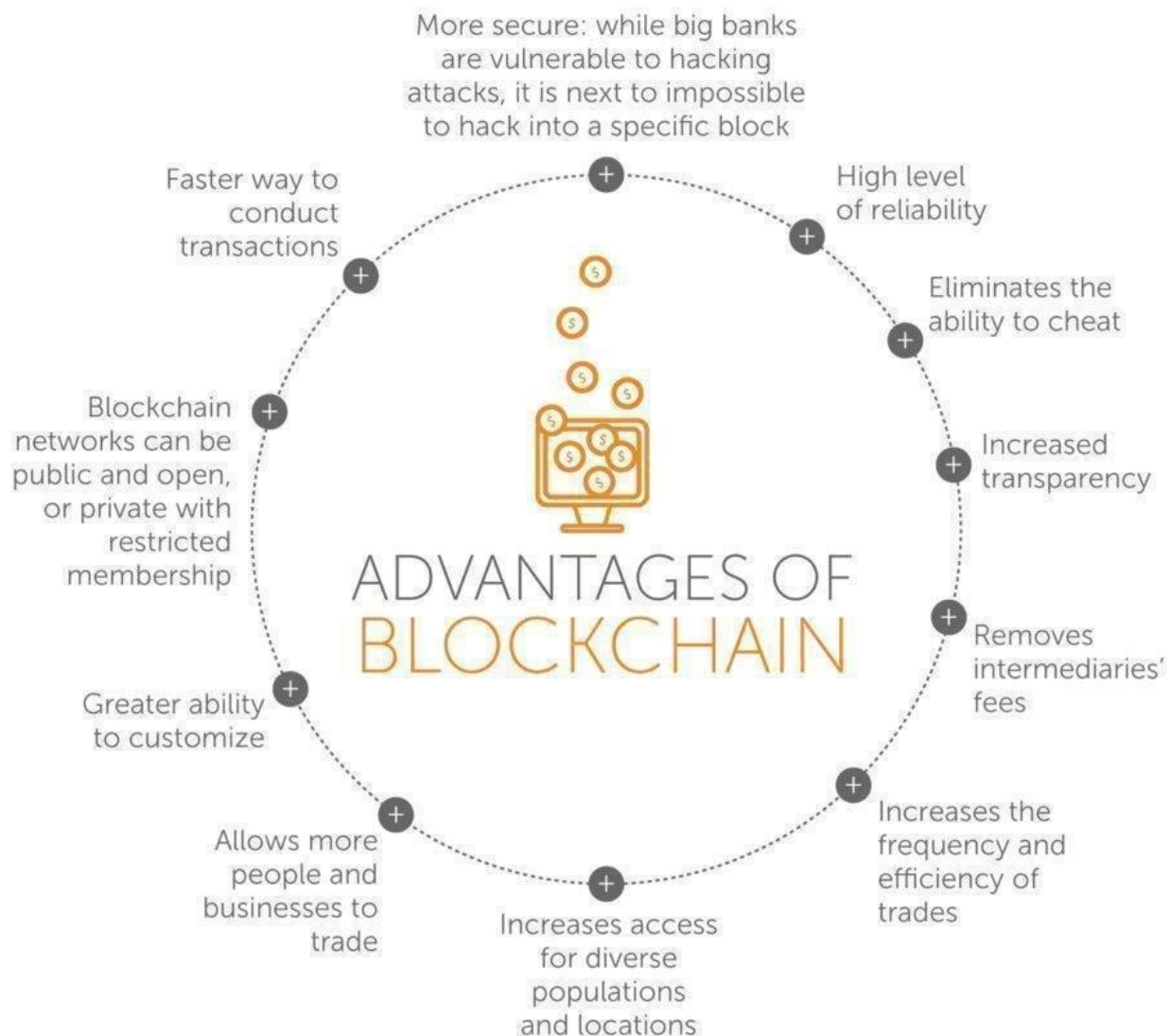
Background:-

- **Blockchain essentially is a database of record stored, linked and secured by cryptography. While it can be distributed (accessed by many), it cannot be copied or duplicated. It has timestamps that allows each user to understand edits in the various versions of the document.**



Potential of blockchain:-

- Blockchain technology is considered revolutionary for its ability to enable the secure movement of assets, without intermediaries, with its economic impact projected to exceed \$3 trillion in the next decade.
- Sectors such as financial services, agriculture, healthcare, real estate and utilities all crucial for an emerging economy like India can see tremendous benefits from the application of blockchain technology.
- **Blockchain** has numerous **emerging applications**-banking and financial services, insurance, electronic governance, cybersecurity, real estate, education, health care sectors, etc. Thus, it has the **ability to transform the way nations and individuals work** in their day-to-day applications.
- **India:-**
 - Public blockchains offer tremendous opportunity for India across four dimensions, jobs, capital, solutions to India's problems and global strategic positioning.
 - Blockchain-based initial coin offerings (ICOs), when done correctly, open up a whole new channel for startup funding and tap into more than \$20 billion raised through the ICO route. With its strong IT ecosystem, **India can become a leading blockchain development hub and a major net beneficiary of global capital inflows.**
 - Decentralized applications on public blockchains can solve myriad Indian problems, such as eliminating middlemen, providing data security, reducing corruption and tampering of financial ledgers, and improving the speed of service delivery by governments and corporations.
 - Blockchain could play a crucial part in health insurance claims management by reducing the risk of insurance claim frauds.
 - The technology can also be used to prevent the sale of spurious drugs in the country by tracking every step of the supply chain network.
 - Artificial Intelligence and Internet of Things (IoT) can gain immensely from blockchain applications
 - Critical citizen information like land records, census data, birth and death records, business licenses, criminal records, intellectual property registry, electoral rolls could all be maintained as blockchain powered, tamper-proof public ledgers.



▪ **Uses and possibilities** of blockchain are:

- Confidential communication of cryptocurrency.
- Safe, cost effective and fast bank transactions.
- Secure legal documents, health data, notaries and personal documents.
- Distribution of land records and government financial assistance.
- Cloudstorage, digital identification, smart communication and digital voting.
- Blockchain removes the need for using a trusted third party such as a bank to make a transaction by directly connecting the customers and suppliers.
- Transaction time is reduced.
- Blockchain's ability to enhance real-time visibility in the functioning of the supply chain will prevent leakages, and thereby increase efficiency.
- It provides an opportunity for technology start-ups for developing and using the technology for diverse applications.

Regulatory oversight needed for blockchain:-

▪ **Regulation in India:**

- The current debate in India has, unfortunately, focused too heavily on trading and speculation, looking at cryptocurrencies as an investment tool, rather than understanding the **potential of core blockchain technology** and the **basic role of cryptocurrencies** as an incentive mechanism to **secure decentralized transactions**.
- **Prevailing cyber laws in India** touch almost all aspects of **transactions and activities** involving the internet, www and cyber space (**IT Act 2000** and amended in 2008, **section 463** of IPC, and **section 420**). But in today's



techno-savvy environment the world is becoming **more and more digitally sophisticated and so are the crimes. India's cyber laws are lacking** in this respect.

- There are sufficient global examples of countries that have taken nuanced and cautious steps in regulating the technology, and are **focusing on stopping illegal activity without hurting innovation.**

Way forward:-

- As core developers/shapers of this technology in India, all citizens should fully **cognizant and sympathetic** to government concerns of **money laundering, tax evasion, investor protection and capital flight.**
- There should be an independent cybersecurity auditing structure
- There needs to be a minimum set of universally accepted and recognized data protection and data privacy norms.
- In case of failure to comply, there should be a heavy penalty and punishment otherwise who will ensure the safety of citizens in cyberspace.
- Blockchain, with all its possibilities, needs a serious look at its vulnerabilities and commerciality.
- Before introducing blockchain into the public sector data-handling system, we need a robust and informative data repository
- Proper regulations for the use of blockchain technology in the country are needed.
- Identifying and resolving key issues and challenges in implementing this technology, the prime amongst those being data privacy.
- India should effectively channel its technical human capital surplus to position itself as one of the pioneers during this upcoming wave of innovation.

Q) Solving the open defecation challenge requires an investment in technology. Examine. (250 words)

The hindu

Why this question

Bill and Melinda Gates foundation has done some exemplary work in ensuring that the sustainable development goals related to sanitation do not just remain a pipe dream. The technological innovation brought in by them is important particularly for India considering our very own swachh Bharat abhiyan as the well as the socio economic costs that we pay on account of poor sanitation.

Key demand of the question

The question expects us to first highlight the status quo wrt sanitation and highlight that the goal is to achieve sanitation related targets in SDG. Thereafter, we need to explain why technological solution is the way to go. Next we need to explain the kind of technology developed by BMCG and how they can find application in India.

Directive word

Examine – When you are asked to examine, you have to probe deeper into the topic, get into details, and find out the causes or implications if any.

Structure of the answer

Introduction – Explain about the SDG target related to sanitation and the target of ODF in India.

Body

Discuss the status quo with respect to sanitation and highlight the socio economic damages that it causes.

Explain how technology can help in resolving this issue. Discuss the innovations which have come out of BMCG such as Multi-User Reinvented Toilets which solves many of the issues faced in installation and use of toilets especially in countries such as India

Using experience from swachh Bharat mission, explain how we are also working on deploying technologies like waterless urinals etc and these innovations will help us in saving time by not reinventing the wheel

Conclusion – emphasize on the gravity of the problem and highlight how technology can come to the aid.



Background:-

- Eliminating Open Defecation in India is one of the key aims of the Swachh Bharat Abhiyan movement . Eliminating open defecation is the part of sustainable development goals as well. 2011 Census found that 70% of rural households do not have a toilet or latrine

How technology can help in making India open defecation free:-

- **Mobile application to track the use of toilets**
 - The **mobile application ‘Outcome Tracker’ developed by World Bank’s Water and Sanitation Programme (WSP)** has been effectively utilised by the district-level verification team in Bikaner to survey households, schools, and anganwadi centres in gram panchayats that have claimed ODF status.
- Spread of technologies across states and to partner with all stakeholders including researchers, academic institutions and NGOs working on sanitation.
- These inexpensive alternative to traditional waste disposal could be key in solving India’s overwhelming sanitation woes.
 - SafiChoo toilet is an inexpensive mobile toilet intended reduce oral-faecal contamination and the spread of water, sanitation, and hygiene related diseases.
 - **The bio-digester** is a simple, low-cost technology for treating human waste and providing safe sanitation facility.
 - **In Ecosan toilets**, there is no need to flush and the urine and faecal matter is utilised as valuable urea and manure. Which means sewage and manual scavenging will never be a problem.
 - **Bamboo toilets:-**
 - When it comes to sustainable and affordable sanitation, these Bamboo toilets perfectly fit the bill. The structures are built with bamboo and are stronger comparable to steel. Bamboo toilets are a huge hit in Nagaland
 - Multi-User Reinvented Toilets solve many of the issues faced in installation and use of toilets especially in countries such as India.

Other issues that cannot be ignored are:-

- **Purity and pollution:-**
 - The **key reason for this is that basic latrines that need to be emptied out manually or pumped by simple machines are unacceptable to higher caste Hindus.**
 - It is considered polluting to the individual and the home, and historically associated with untouchability. So people rather defecate in open than having a toilet at home.
 - It is not just a matter of access but a problem of perceptions of pollution, ritual purity, and caste.
 - Even if the government builds free toilets without any leakage or corruption, India will at best have 80 million new toilets that a large proportion of Indians do not want to use.
- **Contract labour :-**
 - Municipalities began to employ more contractual labourers mostly scavengers forced into the profession by their caste to remove waste.
 - The sanitation campaign burdens the contractual labourer with an ‘exclusive’ right to cleaning public spaces, while making it a voluntary act for the ‘public’ to not defecate, urinate or litter in random spaces. This reinforces the marginalization and stigmatization of such labourers.
- **The Swachh Bharat campaign hardly addresses a reworking of the underground sewerage system due to which many such labourers have died** recently while cleaning jammed manholes that open into the sewerage system etc.
- **The rate of open defecation is not decreasing much:-**
 - India has far higher levels of open defecation than other countries of the same GDP per capita. For example, India has a higher GDP per capita than Bangladesh, but in Bangladesh only 8.4% households defecate in the open, compared to 55% in India.
- **Funds unspent:-**
 - Centre has literally forgotten to spend the money earmarked to promote the use of toilets, a concern raised in the **State of India’s Environment in Figure: 2018.**
 - Centre has also failed to exhaust its budget for Swachh Bharat Mission-Gramin. This, despite the fact, that **the budget for the scheme has seen a dip** over the past year.
- **Implementation issues:-**
 - Sanitation coverage figures seemed to be more on paper but the actual progress at the ground level is very lethargic. Behavioural change is still a distant reality.



- **Quality:-**
 - Standing committee has also raised questions over the construction quality of toilets and said that the government is counting non-functional toilets, leading to inflated data.
- **Unable to reach target:-**
 - **Access to free toilets has not helped resolve open defecation in India.** The programme is unlikely to succeed in its primary task of eliminating open defecation by October 2019

Q) Explain the advantages of additive manufacturing? Discuss what advantages it would bring to Indian manufacturing sector? (250 words)

[The hindu](#)

Why this question

The article explains in a very lucid manner what advantages are offered by 3d printing for manufacturing process and how it can benefit economies. It also examines the potential of India in appropriating the usage of additive manufacturing. This is a technology which has immense potential and hence this question is important for mains.

Key demand of the question

The question expects us to first explain what additive manufacturing is and the advantages of it. Next, we need to discuss the advantages offered by this technology to optimize the manufacturing process in India, the industries where this can prove beneficial as well as discuss India's readiness for this technology.

Directive word

Discuss – here in your discussion, you need to bring out the advantages that such technology would bring to India and also explain the drivers that make India ready for accepting such a technological shift.

Structure of the answer

Introduction – Explain what additive manufacturing is.

Body

Discuss the advantages offered by additive manufacturing as explained in the article – bring down cost, decentralize manufacturing etc

Discuss the advantages that it can have for India – eliminates large capital outlays. Machines are cheaper, inventories can be small and space requirements are not large. Thus, jump-starting manufacturing does not face the massive hurdle of large capital requirement and the traditional small and medium enterprises can easily be adapted and retooled towards high technology manufacturing, Indian expertise in software sector etc

Explain what makes India ready to take this technological leap – programs such as digital India, digital penetration etc

Conclusion – Summarize the advantages of adopting additive manufacturing and way forward.

Background:-

- Additive manufacturing has now gone mainstream in developed countries and is beginning to replace traditional manufacturing for many different applications.
- One recent survey of U.S. manufacturers shows that about 12% have started using additive manufacturing for their products and expectations are that this will result in about 25% of products in the next three-five years.

Additive manufacturing:-

- In additive manufacturing, the physical object to be built is first designed in software. This design is fed to computerised machines, which build that object layer by layer.
- The technology is suitable for building the entire system in one go, with hollow interiors without assembly or interlocked parts



Advantages:-

- Retooling of machines is not required and each unit can be **customised**. By eliminating the need to hold a large inventory of parts, set up an assembly line and purchase costly machines, adaptive manufacturing **reduces capital and space requirements** as well as **the carbon footprint**.
- **Multiple applications:-**
 - This technology is used to build helmets, dental implants, medical equipment, parts of jet engines and even entire bodies of cars. In some industries, the progress is astonishing. Nearly all hearing aid manufacturers now use additive manufacturing.
- **Variety is free :-**
 - Changing a part is simple and can be made easily in the original CAD file and the new print can be taken easily.
- **Complexity is free:-**
 - Printing of a complex part costs less than simple cubes of the same size. The less solid or more complex object, it can be fastly and cheaply made through additive manufacturing.
- **Little-skill manufacturing**
- **Less Waste :-**
 - Material needed is only used and hence there is less chance of materials being wasted.

Issues:-

- **Affects labour:-**
 - It decreases reliance on assembly workers and bypasses the global supply chain that has allowed countries like China to become prosperous through export of mass-produced items.
- It will transfer value creation towards software and design and away from physical manufacturing. This would imply that **labour intensive manufacturing exports may be less profitable**.
- For countries that have already invested in heavy manufacturing, this shift to adaptive manufacturing **will be difficult and expensive**.
- **Discontinuous production process :-**
 - To prevent economies of scale, parts can only be printed one at a time.
- **Requires post-processing:-**
 - The surface finish and dimensional accuracy are of low quality than other manufacturing methods.

How it will help India's manufacturing sector:-

- **It eliminates large capital outlays:-**
 - Machines are cheaper, inventories can be small and space requirements are not large. Thus, India will not face the massive hurdle of large capital requirement
 - Even the traditional small and medium enterprises can easily be adapted and retooled towards high technology manufacturing.
- **The Indian software industry is well-established**, and plans to increase connectivity are well under way as part of 'Digital India'.
 - This would allow for the creation of manufacturing facilities in small towns and foster industrial development outside of major cities.
- **It is possible to build products that are better suited for use in harsh environmental conditions.**
 - Products that required assembly of fewer parts also implies that they may be better able to withstand dust and moisture prevalent in our tropical environment and be more durable.
- **Maintaining old products is far easier** because parts can be manufactured as needed and product life-cycles can be expanded.
- **Maintaining uniform product quality is far easier** because the entire system is built at the same time and assembly is not required.

Way forward:-

- India needs to accelerate research at its premier engineering schools on manufacturing machines and methods and encourage formation of product design centres so that the products built suit the Indian environment and consumers.
- India also would need government support to provide incentives for distributed manufacturing in smaller towns, and for the IT industry to work on creating platforms and marketplaces that connect consumer demands, product designers and manufacturers in a seamless way.

**Conclusion:-**

- Therefore a pinch of Indian entrepreneurship thrown in, will allow India to develop a manufacturing ecosystem that will not only allow India to compete with global manufacturing, it will also create products that are uniquely suited to Indian conditions.

Q) Analyze how use of technology enriches healthcare sector and how such technology can assist in National Health Protection Mission ? (250 words)

The hindu**Why this question**

This article discusses about the application of technology in healthcare sector and how it can help in improvement of achievement of outcomes under NHPM. This is an important application of technology and hence this question.

Key demand of the question

The question firsts expects us to explain how technology is being used for reaching new frontiers in healthcare sector. Next we need to explain about NHPM in brief and thereafter analyze how technology can be helpful in better fulfilling the objectives of the mission.

Directive word

Analyze – When asked to analyze, you have to examine methodically the structure or nature of the topic by separating it into component parts and present them as a whole in a summary.

Structure of the answer

Introduction – *Highlight that technology has progressed by leaps and bounds and its application in healthcare sector is immense.*

Body

Explain the application of technology on healthcare sector – Telemedicine has already brought healthcare to the remotest corners of the country. The use of artificial intelligence for preventive and predictive health analytics can strongly support clinical diagnosis with evidence-based guidance, and also prevent disease. From the virtual reality (VR) of 3D-printing, we are now moving towards augmented reality (AR), by which, for example, every piece of node in a malignant melanoma can be completely removed, thereby eliminating the risk of the cancer spreading to any other part of the body. Biotechnology, cell biology and genetics are opening up whole new paradigms of understanding of human life and disease, and have made personalised medicine a way of life.

Explain about NHPM and discuss how technology can be useful with points such as – By leapfrogging through smart adoption of technology and using emerging platforms such as Blockchain, significant improvements are possible in healthcare operations and costs.

Conclusion – *Mention that to fulfill the healthcare needs of such a large population on budget cost would make the use of technology imperative.*

Background :-

- Healthcare in India has been transformed over the last three decades. There is improved indices on life expectancy, infant mortality, maternal deaths and quality of outcomes. Technical advancements are revolutionizing the healthcare industry all around the globe and India is not far behind.

How technology enriches healthcare:-

- Technology has been developed and applied to practices such as **diagnosis processes, treatment protocol development, drug development, personalized medicine, and patient monitoring and care.**
- **HEALTHCARE ORGANISATION**
 - Technology has the potential to be used in planning and resource allocation in health and social care services. It is also being used with the aim of improving patient experience.
- **MEDICAL RESEARCH**
 - Technology especially artificial intelligence can be used to analyse and identify patterns in large and complex datasets faster and more precisely than has previously been possible.



- It can also be used to search the scientific literature for relevant studies, and to combine different kinds of data for example, to aid drug discovery.
- Researchers have developed an AI 'robot scientist' called Eve which is designed to make the process of drug discovery faster and more economical
- **CLINICAL CARE**
 - Technologies have the potential to aid the diagnosis of disease. Using AI to analyse clinical data, research publications, and professional guidelines could also help to inform decisions about treatment.
 - **Medical imaging :-**
 - AI could reduce the cost and time involved in analysing scans, potentially allowing more scans to be taken to better target treatment. AI has shown promising results in detecting conditions such as pneumonia, breast and **skin cancers, and eye diseases.**
 - AI provides doctors the ability to interpret imaging results may allow clinicians to be aided to detect a change in an image that is minute in detail, or something that a clinician may have accidentally missed.
 - **Screening for neurological conditions :-**
 - New technological tools are being developed that analyse speech patterns to predict psychotic episodes and identify and monitor symptoms of neurological conditions such as Parkinson's disease.
 - **PATIENT AND CONSUMER-FACING APPLICATIONS**
 - Wearable health trackers – like those from FitBit, Apple, Garmin and others – monitors heart rate and activity levels. They can send alerts to the user to get more exercise and can share this information to doctors (and AI systems) for additional data points on the needs and habits of patients.
 - **PUBLIC HEALTH**
 - Technology has the potential to be used to aid early detection of infectious disease outbreaks and sources of epidemics, such as water contamination.
 - Technology has also been used to predict adverse drug reactions
 - **Managing Medical Records and Other Data**
 - Robots collect, store, re-format, and trace data to provide faster, more consistent access.
 - **Doing Repetitive Jobs**
 - Analyzing tests, X-Rays, CT scans, data entry, and other mundane tasks can all be done faster and more accurately by robots.
 - **Treatment Design**
 - Technology systems have been created to analyze data notes and reports from a patient's file, external research, and clinical expertise to help select the correct, individually customized treatment path.
 - **Digital Consultation**
 - Apps like Babylon in the UK use technology to give medical consultation based on personal medical history and common medical knowledge.
 - **Precision Medicine**
 - Genetics and genomics look for mutations and links to disease from the information in DNA. With the help of new technologies body scans can spot cancer and vascular diseases early and predict the health issues people might face based on their genetics.
 - **Tele health**
 - The ability to monitor patients using AI, may allow for the communication of information to physicians if possible disease activity may have occurred.
 - **Monitoring of Chronic Conditions**
 - **Low cost:-**
 - With the development of more and more technology and artificial intelligence, healthcare can eventually be delivered at a lower cost because when efficiency is increased, diagnostics will be more focused.
 - **Save time of doctors:-**
 - AI-enabled medical care plays the role of an informative assistant that enables doctors to gain an understanding of meaningful patterns from data collection and eventually can save a lot of time, effort and costs through easy access to unbiased, consistent, good-quality diagnosis and treatment.
 - Other technology applications are smart diagnostics, multipurpose tele-consultation kiosks, remote patient monitoring, more efficient procurement, payment technology, disease surveillance, technology driven large scale trainings etc.



- **Use of ICT in the Indian Healthcare System**
 - Electronic Health Record (EHR) and the ability to exchange health information electronically can help the providers to extend higher quality and safer care for patients.
 - Diagnostic accuracy, reduced waiting times, better referral management and greater satisfaction with services.
- **International Experience**
 - Canada was one of the earliest to start in 2002 to lead the development and implementation of electronic health projects.
 - K., Australia and Singapore have been other prominent countries who have taken initiatives for setting up nationwide e-Health.
- **The adoption of technology in India is being propelled by the likes of Microsoft and a slew of health-tech startups.** For instance, Manipal Hospitals, headquartered in Bengaluru, is using IBM Watson for Oncology, a cognitive-computing platform, to assist physicians discover personalised cancer care options, according to an Accenture report.

National Health Protection Mission:-

- It addresses the healthcare needs of over 500 million Indians in the first stage, what is probably the world's largest public health-for-all insurance scheme.
- The vast scale of the programme requires reimagining an innovative model which will transform healthcare delivery in the country.

How technology can assist in NHPM:-

- **Chronic diseases:-**
 - Thus, prevention and management of chronic diseases is an area where technology led user engagement solutions can play a vital role.
- India is extremely short in doctors at all levels, General Physicians to diagnose and help manage chronic conditions to specialist's in Pathology and radiology. **New technology especially AI can help the doctors in faster diagnosis allowing them to focus on reviewing the data given by AI algorithms and work on complicated cases that AI cannot handle.**
- **Technology is capable of solving various healthcare challenges in India. The technological innovation is proving to be beneficial in diagnosis procedure, monitoring of chronic conditions, assisting in robotic surgery, drug discovery etc.**
- **Tackle economic disparity:-**
 - The focus of most AI-based healthcare initiatives in India has been to extend medical services to traditionally underserved populations in India such as rural areas that do not have the required infrastructure or enough primary physicians, and economically weaker sections of society who may not be able to afford certain medical facilities. **Therefore, AI as it is used in healthcare in India appears to be addressing issues of economic disparity rather than widening existing gaps as feared.**
- Through smart adoption of technology and using emerging platforms such as Blockchain, significant improvements are possible in healthcare operations and costs.

Way Forward

- India needs to rapidly adapt, embrace and drive change if it wishes to stay relevant in the global healthcare order.
- India needs to achieve a balance between technology and innovation and continue to deliver world class care, while finding efficient ways to lower the cost of care.

Topic: Awareness in the fields of IT, Space, Computers, robotics, nanotechnology, biotechnology and issues relating to intellectual property rights.

Q) Discuss how biotechnology can solve the problems faced by India today. (250 words)

[pib](#)

Why this question

Biotechnology has made huge progress and along with nanotechnology and artificial intelligence, it is going to play a huge role in the future. In this context it is important to discuss how it can help solving the problems faced by India today.



Directive word

Discuss- this is an all-encompassing directive which mandates us to write in detail about the key demand of the question. we also have to discuss about the related and important aspects of the question in order to bring out a complete picture of the issue in hand.

Key demand of the question.

The question wants us to write in detail about the uses of biotechnology in terms of solving the health, environmental and other problems faced by today's India.

Structure of the answer

Introduction– write a few introductory lines about the progress witnessed in the biotechnology sector.

Body-

Discuss in points/ paragraphs, the scope and use of biotechnology in solving the problems faced by India. E.g

Discuss how biotechnology can be used to solve the problems related to;

- *Environment*
- *Health and Lifestyle diseases*
- *Infectious diseases*
- *Health of the old people*
- *Food production and agriculture etc*

Conclusion– based on your discussion, form a fair and a balanced conclusion on the given issue.

Background:-

- Biotechnology will help developing countries accomplish things that they could never do.

Biotechnology can solve India's problem :-

- **Environment:-**
 - Biotechnology can be used to tackle environmental issues like deforestation and air pollution
 - Biotechnology can help in finding out the level of Particulate Matter 2.5 in the air,
 - The benefit of environmental biotechnology helps us to avoid the use of hazardous pollutants and wastes that affect the natural resources and the environment.
- **Biotech can address India's hunger problem:-**
 - Latest innovations in biotechnology that fortify major staples with micro nutrients like vitamin A, zinc and iron can be game changers for hunger problem in India.
- **Applications of Biotechnology in Medicine**
 - Biotechnology techniques are used in medicine for diagnosis and treating different diseases. It gives opportunities for the people to protect themselves from dangerous diseases.
 - The field of Biotechnology, genetic engineering has introduced techniques like gene therapy, recombinant DNA technology and polymerase chain reaction which use genes and DNA molecules to diagnose diseases and insert new and healthy genes in the body which replace the damaged cells
 - Genetic modification in mosquitoes can solve the problems of epidemic diseases such as dengue and malaria
- **Applications of Biotechnology in Agriculture**
 - **Biotechnology has played major role in agriculture by altering genes, studying and cloning various crops in order to provide better quality products of foods ultimately improving our lives.**
 - Potential advantages that biotechnology can confer across a wide range of agricultural applications are in **areas such as livestock management, storage of agricultural products and sustaining current crop yields, while reducing the use of fertilizers, herbicides and pesticides.**
 - Biotechnology offers a very promising **alternative to synthetic foods and an improvement on conventional plant-breeding technologies.** Combined with other advanced agricultural technologies, it offers an **exciting and environmentally responsible way to meet consumer demand for sustainable agriculture.**
- **Application of Biotechnology in Food Processing**
 - Biotechnology has a major application in the food sector.



- It helps in improving the edibility, texture, and storage of the food; in preventing the attack of the food, mainly dairy, by the virus like bacteriophage
- It produces antimicrobial effect to destroy the unwanted microorganisms in food that cause toxicity
- It prevents the formation of mycotoxins and degradation of other toxins and anti-nutritional elements present naturally in food.

Q) Highlight the achievements of ISRO as a pioneer in space technology ? (250 words)

The hindu

Why this question

The continued success of ISRO in the field of space technology, as demonstrated by yet another success discussed in the article makes ISRO an important organization for mains. Hence this question.

Key demand of the question

The question expects us to bring out the achievements of ISRO since its inception to present date. We can adopt a timeline approach to answer this question.

Structure of the answer

Introduction – explain about ISRO as an organization.

Indian Space Research Organization (ISRO) was established in 1969. Since its beginning, ISRO has created a niche for itself in the space technology world through continuous low-cost innovations.

Body – Discuss the achievements of ISRO ranging from launch of Aryabhata, to INSAT, PSLV, Chandrakant, reusable launch vehicle etc. Emphasize on the achievements of ISRO in launching satellites on a commercial scale and also the frugal technology of ISRO.

Conclusion – Explain what ISRO's success means for India.

Background :-

- Indian Space Research Organisation (ISRO) has had many remarkable milestones since their launch in 1969. They have time and again proved that they completely stand by their vision to 'harness space technology for national development'. Their achievements over the years has created a standard par excellence for other government agencies as well.

Achievements of ISRO as a pioneer in space technology:-

- **Created a world record by launching 104 satellites in single mission, 2017:**
 - ISRO created history by lifting off 104 satellites using the Polar Satellite Launch Vehicle (PSLV), an Indian rocket. It also included the Cartosat-2 series, India's earth observation satellite.
- **Mangalyaan or MOM, 2014:**
 - India became the first country to successfully reach Mars in its first attempt. ISRO also became one of the only four space organisations to have reached the red planet
 - Mars Orbiter Mission or MOM had a budget of just Rs. 450 crore, making this Mars mission the least expensive till now. The goal of the mission was to collect more data on the atmosphere of the planet.
- **Chandrayaan 1, 2008:**
 - In 2008 a 312 days unmanned lunar mission was launched.
 - It was India's first mission to moon and was a breakthrough in its space mission as it was one of the only six space organisations to attempt this.
 - The aim of the mission revolved around understanding the entire topography and chemical characteristics.
- **Heaviest Commercial Mission, 2015:**
 - Heaviest commercial mission was taken up by ISRO where they launched 1440 kg of load.
 - Five British satellites were launched as part of the mission using Polar Satellite Launch Vehicle-C28 in
- **Indian Regional Navigation Satellite System (IRNSS):**
 - With the operational name, NAVIC (Navigation with Indian Constellation), these group of seven satellites will help India build its own navigation system. This made India one of the five countries to have its own navigation system in place



- **Space Capsule Recovery Experiment (SRE-1), 2007:**
- It was launched along with three other satellites to display the ability of recovering an orbiting space capsule. The intention was to test other things such as Thermal Protection System, management of communication blackout, navigation, guidance and control, etc.
- **Indian National Satellite System (INSAT), 1983:**
 - Launched by ISRO, INSAT is a series of multi purpose geostationary satellites. It helped with telecommunications, broadcasting, meteorology, and search and rescue operations. The satellites built a communication system all across Asia Pacific region. There are nine working satellites in the group.
- **GSLV MK3, 2014:**
 - ISRO launched GSLV-MK3 in 2014, that has an Indian made crew capsule which can carry up to three astronauts to space.
 - India will become a part of the exclusive group of space cruising nations which can take humans to space.
 - It is one of the heaviest rockets and is capable of carrying 4 tonnes of load.
- **Reusable Launch Vehicle (RLV):**
 - These space shuttles were built at a very low cost of Rs. 95 crores. The intention was to reduce the satellite costs and these are reusable space shuttles.
- **Aryabhata, 1975:**
 - Aryabhata is India's first satellite and has been named after the famous astronomer. It was the spacecraft to be entirely built in the country making a breakthrough in space missions.
- **2018:-**
 - Indian Space Research Organisation has marked a big milestone by successfully testing its heavy-lift launcher while launching an advanced communication satellite (the Geosynchronous Satellite Launch Vehicle MarkIII (GSLV MkIII) launched GSAT29, an advanced communications satellite, into a geosynchronous transfer orbit)
 - It plans to use this for the Chandrayaan-II moon mission in 2019.

Q) Discuss about the NASA'S InSight mission on Mars ? (250 words)

[Indian express](#)

Why this question

The landing of InSight on Mars is a significant development in the field of space technology. In the past, UPSC has asked about such space mission, like the question on Juno and thus this event needs to be prepared.

Key demand of the question

The question expects us to explain about the InSight mission, discuss its objectives and explain about its significance.

Directive word

Discuss – The discussion herein, should revolve around the key demand of the question.

Structure of the answer

Introduction – Highlight the current event due to which InSight is in news.

Body

Explain about the InSight mission

- *Mars Insight's goal is to listen for quakes and tremors as a way to unveil the Red Planet's inner mysteries, how it formed billions of years ago, and by extension, how other rocky planets like the earth took shape.*
- *The unmanned spacecraft, launched nearly seven months ago, is NASA's first to attempt to touch down on Mars since the Curiosity rover arrived in 2012.*
- *More than half of 43 attempts to reach Mars with rovers, orbiters and probes by space agencies from around the world have failed.*



- *NASA is the only space agency to have made it, and is invested in these missions as a way to prepare for the first Mars bound human explorers in the 2030s.*
- *InSight (Interior Exploration using Seismic Investigations, Geodesy and Heat Transport) is on a 24-month mission. The landing site is Elysium Planitia, where InSight can stay still and quiet all through.*

Discuss its objectives – InSight won't be looking for life on Mars. It will study its insides — what it's made of, how that material is layered and how much heat seeps out of it. This is important because Earth and Mars used to be similar — warm, wet and shrouded in thick atmospheres — before they took different paths 3-4 billion years ago. Mars stopped changing, while Earth continued to evolve. With InSight, scientists hope to compare Earth to Mars, and better understand how a planet's starting materials make it more or less likely to support life.

Explain why it is significant

Conclusion – *Highlight that this is a major development and would help us enrich our knowledge about the solar system and conditions necessary for formation of life.*

NASA's insights mission :-

- *InSight, short for Interior Exploration using Seismic Investigations, Geodesy and Heat Transport, is a Mars lander designed to give the Red Planet its first thorough checkup since it formed 4.5 billion years ago.*
- *It is the first outer space robotic **explorer to study in-depth the inner space of Mars: its crust, mantle, and core.***
- *The lander uses cutting edge instruments, to delve deep beneath the surface and seek the fingerprints of the processes that formed the terrestrial planets. It does so by measuring the planet's vital signs: its pulse (seismology), temperature (heat flow), and reflexes (precision tracking).*
- *This mission is part of **NASA's Discovery Program** for highly focused science missions that ask critical questions in solar system science.*
- **The InSight Mars lander has two science objectives that support the Mission's science goals:**
 - **Formation & Evolution:**
 - *Understand the formation and evolution of terrestrial planets through investigation of the interior structure and processes of Mars.*
 - **Tectonic Activity:**
 - *Determine the present level of tectonic activity and meteorite impact rate on Mars.*

Significance:-

- *Studying Mars interior structure answers key questions about the early formation of rocky planets in inner solar system – Mercury, Venus, Earth, and Mars – more than 4 billion years ago, as well as rocky exoplanets.*
- *The InSight mission seeks to uncover how a rocky body forms and evolves to become a planet by investigating the interior structure and composition of Mars. The mission will also determine the rate of Martian tectonic activity and meteorite impacts.*
- *More than half of 43 attempts to reach Mars with rovers, orbiters and probes by space agencies from around the world have failed. NASA is the only space agency to have made it, and is invested in these missions as a way to prepare for the first Mars bound human explorers in the 2030s.*

Q) What do you understand by gene drive and examine its implications ? (250 words)

[Reference](#)

[Reference](#)

Why this question

Ending Malaria via this technology is a possibility and it is currently being debated by CBD. Such debates and the underlying technology is important for preparing science and technology section.

Key demand of the question

The question expects us to explain what Gene drive technology is, how it works, discuss its applications. Thereafter we have to analyze the usage of this technology and the likely impact it can have on ecosystem, and other such issues that may arise. Finally, we need to provide our opinion for the way forward for this technology.



Directive word

Examine – When you are asked to examine, you have to probe deeper into the topic, get into details, and find out the causes or implications if any .

Structure of the answer

Introduction – *Explain that this is a technology newly developed and currently under focus due to its role in potentially tackling diseases such as malaria.*

Body

Explain about the technology – Engineered gene drives are genetic systems that circumvent traditional rules of sexual reproduction and greatly increase the odds that the drive will be passed on to offspring. This enables the spread of specified genetic alterations through targeted wild populations over many generations. They represent a potentially powerful tool to confront regional or global challenges, including control of invasive species and eradication of insect-borne diseases such as malaria and dengue.

Explain that the idea is not new, but Harvard-based researchers have now outlined a technically feasible way to build gene drives that potentially could spread almost any genomic change through populations of sexually reproducing species

Discuss its application as potentially powerful ecosystem management tool for global sustainability, but one that carries with it new concerns, as with any emerging technology

Highlight the concerns as articulated in the down-to-earth article

Conclusion – *Give your view on what should be the way forward for gene drive.*

Background :-

- Harvard-based researchers have now outlined a technically feasible way to build gene drives that potentially could spread almost any genomic change through populations of sexually reproducing species.

Gene drive:-

- Gene drive is a genetic element that has a much higher chance of being inherited regardless of evolutionary fitness.
- Gene drives work by ensuring that a higher proportion of an organism's offspring inherit a certain, 'selfish' gene than would happen by chance, allowing a mutation or foreign gene to spread quickly through a population.
- Engineered gene drives are genetic systems that circumvent traditional rules of sexual reproduction and greatly increase the odds that the drive will be passed on to offspring. This enables the spread of specified genetic alterations through targeted wild populations over many generations.

Implications:-

- Gene drives present potential new solutions for a variety of issues facing the global population, **including eradicating or altering disease vectors (such as mosquitoes), controlling invasive species of plants, insects, or mammals, and combating pesticide resistance.**
- With the recent developments and advancements of CRISPR technology, the **potential of gene drives has been greatly enhanced.**
- The revolutionary CRISPR–Cas9 gene-editing tool has led to the development of synthetic gene drives that are **designed to eliminate problem species, such as malaria-transmitting mosquitoes, from the wild by, for instance, ensuring that offspring are infertile.**

Challenges:-

- One obstacle to the practical use of gene-drives is the need for relevant regulations, or at least the application of existing laws on genetic modifications.
- Gene-drive technologies are still some way off from the necessary environmental risk assessments for field trials and releases that would sufficiently scrutinise the risks to the environment and/or human health.
- A mutation could happen mid-drive, which has the **potential to allow unwanted traits to ride along.**
- Cross-breeding or gene flow **potentially allow a drive to move beyond its target population.**
- Even when new traits direct impact on a target is understood, the drive may have **side effects on the surroundings.**
- Gene drives affect all future generations and represent the possibility of a larger change in a living species than has been possible before.



- Gene drives are threatening food sovereignty and peasant-led agriculture. Small scale farmers don't need synthetic biology such as gene drive organisms or genome editing to feed communities.

Way forward:-

- There is a need for governments for broad international cooperation to assess the possible impacts on biodiversity of this technology

Q) What do you understand by human microbiome? Why is it important to study human microbiome? Explain the nature of research being carried out in India related to human microbiome? (250 words)

Indian express

Why this question

Human microbiome is an emerging research area where India has started research and thus awareness about this area is necessary.

Structure of the answer

Introduction – Pune hosted an international conference on microbiome research — a field of study that is still in its infancy in India. That could be set to change, with a proposed project that would study and map the human microbiome across the country.

Body

Explain about microbiome – The human body carries diverse communities of microorganisms, which are mainly bacterial. These are referred to as “human microbiome”. These organisms play a key role in many aspects of host physiology, ranging from metabolism of otherwise complex indigestible carbohydrates and fats to producing essential vitamins, maintaining immune systems and acting as a first line of defense against pathogens.

Discuss why microbiome are important – Research on the human microbiome has thrown light on various aspects — how different parts of the human body are occupied by characteristic microbial communities, and how various factors contribute in shaping the composition of the microbiome, including the genetics, dietary habits, age, geographic location and ethnicity. These studies laid a strong foundation to decipher the microbiome’s implications on health and a wide range of diseases

Discuss about the research project in India – Various research groups in the country are working on the human microbiome, Scientists at NCSS have conducted a meta-analysis on gut microbiota of healthy Indian individuals and compared it with that of individuals from other parts of the world. It shows that the Indian population harbours a distinct gut microbial community, which, scientists say, calls for an in-depth investigation of the Indian microbiome. India has a large number of tribal populations largely unaffected by “modern” diet and lifestyle. The prevalence of lifestyle-related disorders such as obesity and diabetes has been known to be significantly lower compared to the non-tribal (urbanised) populations across the globe. Hence, scientists say, a study on the tribal population would help improve knowledge of evolution of the mutualism between gut microbiota and the host.

Conclusion – Conclude by discussing the importance and implication of this research.

Human microbiome:-

- The human body carries diverse communities of microorganisms, which are mainly bacterial. These are referred to as “human microbiome”.
- These organisms play a key role in many aspects of host physiology, ranging from metabolism of otherwise complex indigestible carbohydrates and fats to producing essential vitamins, maintaining immune systems and acting as a first line of defense against pathogens.
- The **human microbiome** refers specifically to the collective genomes of resident microorganisms.

Why is it important to study human microbiome:-

- Research on the human microbiome has thrown light on various aspects like
 - How different parts of the human body are occupied by characteristic microbial communities



- How various factors contribute in shaping the composition of the microbiome, including the genetics, dietary habits, age, geographic location and ethnicity.
- These studies laid a strong foundation to decipher the microbiome's implications on health and a wide range of diseases
- key roles of microbes include programming the immune system, providing nutrients for our cells and preventing colonisation by harmful bacteria and viruses. So it necessary to know about human microbiome.
- Over recent years the gut microbiome in particular has been linked to a plethora of diseases and conditions, from diabetes to autism and anxiety to obesity.
- The gut microbiome has also been linked to how individuals respond to certain drugs, including how cancer patients respond to chemotherapy, and it has even, tentatively, been suggested that it could be linked with how well we sleep.

Indian scenario:-

- Indian population harbours a distinct gut microbial community, which, scientists say, calls for an in-depth investigation of the Indian microbiome.
- A high-level committee at the Department of Biotechnology has shown a keen interest in the proposed project.
 - The project will include collection of saliva, stool and skin swabs of 20,000 Indians across various ethnic groups from different geographical regions.
 - India provides for a wide range of research with more than 4,500 ethnic groups and presence of two global biodiversity hotspots (Himalayan range and Western Ghats).
- The prevalence of lifestyle-related disorders such as obesity and diabetes has been known to be significantly lower compared to the non-tribal (urbanised) populations across the globe. Hence, scientists say, a study on the tribal population would help improve knowledge of evolution of the mutualism between gut microbiota and the host.

Topic: Conservation, environmental pollution and degradation, environmental impact assessment, Disaster and disaster management.

Q) The findings of Living Planet 2018 Report suggests that when it comes to conservation efforts, it can not be business as usual. Analyze. (250 words)

Reference

Why this question

The article highlights the findings of the Living Planet 2018 Report and analyzes the horrors that human species has inflicted on our cohabitant species and the likely impact it is going to have. The question will help you prepare for conservation section or GS3 and changes in flora and fauna topic in GS1

Key demand of the question

The question expects us to bring out the details of Living Planet 2018 Report and explain the impact on fauna in detail. Thereafter, we need to bring out the reasons why situation has come to this and the impact it is likely to have on ecosystem. Finally, we need to provide a way forward.

Directive word

Analyze – When asked to analyze, you have to examine methodically the structure or nature of the topic by separating it into component parts and present them as a whole in a summary.

Structure of the answer

Introduction – *Explain what Living Planet Report is and highlight the major finding that is – Humanity has wiped out 60% of mammals, birds, fish and reptiles since 1970, leading the world's foremost experts to warn that the annihilation of wildlife is now an emergency that threatens civilisation.*

Body – *discuss the findings of the report in greater detail such as the areas where the impact is severe, the reasons why situation has come down to this etc. Discuss the impact that this is going to have on ecosystem and human race. Suggest measures through which the situation can be salvaged.*

Conclusion – *Emphasize on the need to act on this with haste and mention way forward.*



Background:-

Living planet 2018 report reported that humanity has wiped out 60% of mammals, birds, fish and reptiles since 1970, leading the world's foremost experts to warn that the annihilation of wildlife is now an emergency that threatens civilisation.

Findings of the report:-

- The vast and growing consumption of food and resources by the global population is destroying the web of life, billions of years in the making, upon which human society ultimately depends for clean air, water and everything else.
- **Freshwater habitats:-**
 - Freshwater habitats are the worst hit, with populations having collapsed by 83%. As a result of the collapse, Indian crocodiles are on the verge of extinction.
- Three-quarters of all land on Earth is now significantly affected by human activities. Killing for food is the next biggest cause – 300 mammal species are being eaten into extinction – while the oceans are massively overfished, with more than half now being industrially fished.
- **Species disappearing**
 - The index of extinction risk for five major groups birds, mammals, amphibians, corals and an ancient family of plants called cycads shows an accelerating slide towards oblivion.
 - From 1970 to 2014, 60% of all animals with a backbone like fish, birds, amphibians, reptiles and mammals were wiped out by human appetites and activity, according to WWF's "Living Planet" report, based on a survey of more than 4,000 species spread over 16,700 populations scattered across the
- **Boundaries breached:-**
 - Humans have clearly breached two of the so-called planetary boundaries: **species loss, and imbalances in Earth's natural cycles of nitrogen and phosphorous** (mainly due to fertiliser use).
 - Ocean acidification and freshwater supply are not far behind.
 - More generally, the marginal capacity of Earth's ecosystems to renew themselves has been far outstripped by humanity's ecological footprint, which has nearly tripled in 50 years.
- **Forests shrinking**
 - Nearly 20% of the Amazon rainforest, the world's largest, has disappeared in five decades. Tropical deforestation continues unabated, mainly to make way for soy beans, palm oil and cattle.
- **Oceans depleted**
 - Since 1950, Humans have extracted 6 billion tonnes of fish, crustaceans, clams, squids and other edible sea creatures.
 - Climate change and pollution have killed off half of the world's shallow water coral reefs, which support more than a quarter of marine life.
 - Coastal mangrove forests, which protect against storm surges made worse by rising seas, have also declined by up to half over the last 50 years.

Measures needed:-

- More ambition is needed to not simply halt loss but to reverse the trend of biodiversity decline.
- The CBD 2050 vision is that "biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people". This needs to be kept in mind while achieving environmental targets by nations.
- Conservation scientists propose a 2020-2050 'blueprint for biodiversity': a vision for the future through the Convention on Biological Diversity.
- Scenarios and indicators can help imagine the future and create good policies, monitor progress and identify potential win-win solutions for both nature and for people.

Q) Rural India faces a huge problem of air pollution, towards which sufficient attention has not been paid. Analyze. (250 words)

Livemint

Why this question

Indian cities are grappling with the problem of air pollution and the issue has been sufficiently highlighted. However, rural India is also sailing in the same tide but remains largely out of the purview of the media and policy makers. The article discusses the issue in further detail.



Directive word

Analyze-here we have to examine methodically the structure or nature of the topic by separating it into component parts, and present them as a whole in a summary.

Key demand of the question.

The question wants us to dig deeper into the issue and bring out the situation of air pollution in rural India and why it is worse than the problem in cities.

Structure of the answer

Introduction– write a few introductory lines about the problem of air pollution and indoor pollution in the rural India.

Body-

- *Highlight the problem of air pollution in rural India in detail. E.g The World Health Organization's Air Pollution and Child Health: Prescribing Clean Air report released earlier this week underlines the fact that India had almost 61,000 deaths of children under five years due to ambient and household pollution; For other children who are exposed to dangerous levels of air pollution in India—which is 98% or so of them—the issue links to a number of long-term physical and mental developmental problems; It is also connected with the country's shifting epidemiological profile, feeding into the rise of non-communicable diseases such as cardiovascular conditions and cancer; of the 1.1 million air pollution-related deaths in 2015, 75% were in rural India; Stubble burning, brick kilns, coal-fired factories and wood fires for heat all contribute along with stubble burning in north India to a high degree of air pollution in rural India; The draft National Clean Air Programme has set out a miserably low number of monitoring centres for rural areas etc.*
- *Briefly discuss the efforts made by the government in managing the problem and bring out the inadequacies in those efforts. E.g Ujjwala yojana.*

Conclusion- based on your discussion, form a fair and a balanced conclusion on the given issue.

Background:-

- Rural Indians, who make up about two-thirds of the country of 1.3 billion people, are disproportionately at risk of breathing polluted air, according to new research. Of the 1.1 million air pollution-related deaths in 2015, 75% were in rural India.

Rural air pollution:-

- **Stubble burning, brick kilns, coal-fired factories** and wood fires for heat all contribute.
- The problem is that of the 600-plus air quality **monitoring stations the CPCB set up across the country, there are none in rural areas.**
- **Exposure to the smallest and most dangerous airborne pollution particles, known as PM2.5,** was roughly equal across rural and urban India.
- **Residential biomass burning** is the largest individual contributor to air pollution across India, with many poor residents relying on burning wood, crop residue or cow dung to heat homes or to cook food.
- **The problem of outdoor air pollution in rural India is rarely acknowledged,** even though chulhas contribute to it too when the smoke they produce drifts outdoors.
 - Villagers burn fires for warmth for four to five months of the year, and emissions from chulhas and rural industries occur year-round. Regardless of how good rural air may be in the summer, the certainty that it is highly polluted for almost half the year merits notice and investigation.

Efforts made:-

- In 2003, **the Central Pollution Control Board (CPCB) issued guidelines for ambient air quality monitoring.** They differentiated between the types of pollution affecting urban and rural areas. When it comes to the latter, the guidelines focus entirely on indoor air pollution.
- **Draft National Clean Air Programme put out earlier this year was an opportunity to plug the gaps.**
 - So far, that opportunity has not been realized.
 - The programme aims to expand the monitoring network to include 50 rural areas with at least one monitoring station each.
 - There is also little detail on how violations of existing emission norms should be addressed.



- Most crucially, the programme doesn't envisage any cooperation and coordination across crucial ministries such as health, transport and energy.
- **Pradhan Mantri Ujjwala Yojana**, aimed at shifting poor households from biomass to clean liquified petroleum gas (LPG), had the right idea.
 - But it hasn't quite worked out that way in practice. LPG costs are a major deterrent to adoption and that even in households where LPG is used, fuel stacking using biomass fuels alongside LPG is common.
- **Other measures that could improve rural outdoor air quality are also falling short. In December 2015, the National Green Tribunal, or NGT, banned crop-burning in the National Capital Territory, Haryana, Punjab, Rajasthan and Uttar Pradesh.**
 - However, the state environmental secretaries, state pollution control boards and district magistrates in these territories are not enforcing the ruling effectively.
 - Crucially, the ban is highly impractical for farmers, many of whom have no means or incentive to clear their fields in any other way.
 - The government offers subsidies for machines that help farmers plant new crops without having to remove the dry stalks from the previous harvest, but these are still too expensive for most.
- **Rising awareness of outdoor air pollution in rural areas in forums such as the UN is in part the result of recent advances in computer modelling and satellite technology, which have allowed experts to estimate air quality using satellite data.**
 - These estimates cannot capture the same level of detail that on-the-ground monitors do, but they are indicative of the scale and severity of the problem.

Measures needed :-

- There is a **need for the comprehensive framework on the data collection.**
- The **draft policy** should be put to immediate effect with adequate budgetary provision
- **State pollution control boards**, among their other functions, must inspect factories and power plants to ensure compliance with emissions standards.
- **CPCB has to start monitoring pollution on the ground :-**
 - Government-collected data will be important both for understanding variations in air quality over time and space, and for convincing relevant agencies of the problem's gravity.
- **In 2015, the ministry of health and family welfare** officially recognised the issue in a report that emphasised the importance of addressing pollution and health in an integrated manner in both urban and rural areas. Other organs of the government should follow suit.

Q) According to IPCC report, unless net carbon dioxide emissions are brought down to zero by 2050, warming above 1.5°C is practically inevitable. Discuss. (250 words)

Reference

Why this question

The recent IPCC report has highlighted the gravity of situation with regard to the impending climate and environmental disaster due to global warming. In this context it is essential to discuss the need to bring down carbon emissions by 2050.

Directive word

Discuss- this is an all-encompassing directive which mandates us to write in detail about the key demand of the question. we also have to discuss about the related and important aspects of the question in order to bring out a complete picture of the issue in hand.

Key demand of the question

The question wants us to write in detail about the recent IPCC report and its findings in connection with the need to bring down carbon emissions by 2050 so as to limit the global warming to 1.5 degrees celsius above pre industrial levels.

Structure of the answer

Introduction– write a few introductory lines about the recent IPCC report. E.g The Intergovernmental Panel on Climate Change (IPCC) Special Report on 1.5°C (SR 1.5) is unequivocal



in its assertion—unless net carbon dioxide (CO₂) emissions are brought down to zero by 2050, warming above 1.5°C is practically inevitable.

Body– *Discuss the related findings of the report in detail. E.g A 1.5°C warmer world will see higher sea levels, higher temperatures and increase in frequency and intensity of precipitation, floods, droughts and heatwaves. At 1.5°C, the world would reach some critical thresholds beyond which natural ecosystems would fundamentally change and, in some cases, take millennia to recover; The thresholds for irreversible, multi-millennial loss of ice sheets in Greenland and the West Antarctica may also be breached. The warming and acidification of the ocean will cause 70-90 per cent loss of corals and will put the survival of many marine species in jeopardy; Simulations included in the SR 1.5 show that when considering global mean surface temperature, the world has a total remaining carbon budget of just 770 gigatonnes of CO₂, starting from the beginning of 2018, before it breaches 1.5°C, according to the median value of the simulations. At current emission levels, without the removal of CO₂ from the atmosphere, this budget would be exhausted by 2040; The simulations also show that limiting global warming to 1.5°C with little or no overshoot would require net anthropogenic CO₂ emissions to reduce by up to 45 per cent, relative to 2010 levels, by 2030 and attain net-zero CO₂ emissions by 2050 etc.*

Conclusion– *based on your discussion, form a fair and a balanced conclusion on the given issue.*

Background:-

- In order to have any chance of limiting global warming to 1.5°C above pre-industrial levels, as prescribed in the lower limit of the Paris Agreement, nations have about 12 years to effect a complete transition in economy and society.
- The Intergovernmental Panel on Climate Change (IPCC) Special Report on 1.5°C (SR 1.5) is unequivocal in its assertion—unless net carbon dioxide (CO₂) emissions are brought down to zero by 2050, warming above 1.5°C is practically inevitable.

Impact :-

- **World's temperatures have already warmed by up to 1.2°C since pre-industrial levels and the impact of this warming is visible in the form of extreme weather events**, rising sea levels and diminishing Arctic sea ice.
 - In 2018 alone, various parts of the world was battered by extreme weather events be it heat waves and drought in Europe and China, forest fires in the US, dust storms and unprecedented rainfall in India (and high precipitation in Japan and other island nations).
 - **With a further 0.5°C warming, the effects would be more pronounced than what scientists had previously predicted.**
- **A 1.5°C warmer world will see higher sea levels, higher temperatures and increase in frequency and intensity of precipitation, floods, droughts and heatwaves.**
- At 1.5°C, the world **would reach some critical thresholds beyond which natural ecosystems would fundamentally change and, in some cases, take millennia to recover**
 - For instance, the sea levels would continue to rise for centuries even if we cap warming at 1.5°C
 - The warming and acidification of the ocean will cause 70-90 per cent loss of corals and will put the survival of many marine species in jeopardy.
- **If 1.5°C warming will have major impacts, those at 2°C would be catastrophic.**
 - Under the Paris Agreement, 1.5°C was put as an aspirational target and 2°C as the “real” target.
 - But IPCC report highlighted that a 2°C warmer world will lead to greater sea level rise compared to 1.5°C. **This will effectively inundate vast coastal areas, disrupting the lives of 10 million more people.**
 - Coral reefs face complete extinction at 2°C and permafrost will melt over centuries, risking runaway climate change due to high methane emissions.
- **India:-**
 - Countries like India, which are highly dependent on agriculture, would suffer pronounced impacts in the form of floods, droughts, water scarcity and decrease in food production, exposing a greater proportion of an already vulnerable population to poverty, food and livelihood insecurity.
 - The difference between 1.5°C and 2°C also means decreased crop productivity and nutritional quality, increased risk of vector-borne diseases and a 50 per cent increase in the extinction rates for plants, vertebrates and insects .
 - Allowing temperature to rise beyond 1.5°C would render India uninhabitable and even poorer.



▪ **Carbon budget:-**

- At current emission levels, without the removal of CO₂ from the atmosphere, this budget would be exhausted by 2040

Way forward:-

- **Average annual investment in low-carbon energy technologies** and energy efficiency needs to scale up by roughly a factor of five between 2015 and 2050.
- The **use of coal should reduce steeply** in all 1.5°C-consistent pathways and its share in electricity mix should be nearly stopped by 2050. So there is an urgent need for even greater realignment of energy policies with climate goals.
- Real emission reductions, according to IPCC, can be achieved through a **combination of new and existing technologies and practices**, including electrification, hydrogen, sustainable bio-based feedstocks, product substitution, and carbon capture, utilisation and storage (CCUS).
- **Mitigation options** for limiting the demand for land include sustainable intensification of land use practices, ecosystem restoration and changes towards less resource-intensive diets are necessary.
- India needs to **rapidly mobilise domestic finance towards mitigation and adaptation efforts**, It will, however, need financial and technological support from developed countries.
- Developing countries need a **supportive framework** in the form of a **rulebook** that binds the developed countries to their funding pledges, provides support for **capacity building** and transfer of **green technologies** on liberal terms.
- **Incremental changes** along with increasing contributions from **renewables** and improvements in **energy efficiencies** would not be sufficient. There should instead be major changes in **technological innovation, behaviour, values and governance**. This is an unprecedented challenge for humanity.

Q) What do you understand by a Blue Bond. Discuss its relevance for a country like India. (250 words)

[Reference](#)

[Reference](#)

Why this question

Seychelles has recently been successful in raising around 15 million dollars from its newly devised Blue Bonds. In this context it is essential to discuss the nature of Blue Bonds and its relevance for a country like India.

Directive word

Discuss- this is an all-encompassing directive which mandates us to write in detail about the key demand of the question. we also have to discuss about the related and important aspects of the question in order to bring out a complete picture of the issue in hand.

Key demand of the question.

The question wants us to describe the meaning of Blue Bonds. It then wants us to discuss the relevance of the blue bonds for India.

Structure of the answer

Introduction– write a simple description of a blue bond. E.g The blue bond is a debt instrument issued by governments, development banks or others to raise capital from impact investors to finance marine and ocean-based projects that have positive environmental, economic and climate benefits. The blue bond is inspired by the green bond concept, which people are more familiar with.

Body-

- *Discuss the concept of blue bonds in detail and mention the initiative of Seychelles in this direction. E.g The bond, which raised US\$15 million from international investors, demonstrates the potential for countries to harness capital markets for financing the sustainable use of marine resources. The World Bank assisted in developing the blue bond and reaching out to the investors etc.*



- *Discuss the relevance of blue bonds for India. Discuss the Indian fisheries sector-employment generated, livelihoods dependent on it, and also mention the issue of overexploitation faced by Indian fisheries sector. In this regard bring out the need for a blue bond like instrument for India.*

Conclusion- *based on your discussion, form a fair and a balanced conclusion on the given issue.*

Background:-

- Recently Republic of Seychelles has launched the world's first sovereign blue bond a pioneering financial instrument designed to support sustainable marine and fisheries projects.

Blue bond :-

- The blue bond is a debt instrument issued by governments, development banks or others to raise capital from impact investors to finance marine and ocean-based projects that have positive environmental, economic and climate benefits.
- The blue bond is inspired by the green bond concept.

Relevance of blue bond for India :-

- Main beneficiaries are people **whose livelihoods depend on marine resources and the ocean.**
 - This includes artisanal and semi-industrial fishers, operators in tourism and seafood value chains, including aquaculture.
 - National and local institutions engaged in the management of marine resources, including fishers associations and government entities.
 - Ultimately, the general population will benefit from a healthier marine environment and increased food security.
- The Blue bonds **will strengthen India's resilience to the impacts of climate change.**
 - This will be made possible with the promotion of sustainable fisheries through proper control and management as the project's ecosystem-based adaptation approach.
 - This project will also help India to diversify its economy and reduce its vulnerability to climate change by adopting climate-smart ocean economies. This will be through the expansion of the seafood value chains.
- The Blue Bond is a **part of an initiative that combines public and private investment to mobilise resources for empowering local communities and businesses.**
- **Fisheries is an important sector in India and it provides employment to millions of people and contributes to food security of the country.**
 - Constituting about 6.3% of the global fish production, the sector contributes to 1.1% of the GDP and 5.15% of the agricultural GDP.
 - Around 90 per cent of India's fish resources are at or above maximum sustainable levels of exploitation. The declining state of fisheries in India impacts livelihood of over 15 million people. With Blue bonds this can be taken care of.

Q) Bans and fines can't stop stubble burning. Do you agree. Also discuss how the issue should be handled. (250 words)

Indian express

Directive word

Discuss- this is an all-encompassing directive which mandates us to write in detail about the key demand of the question. we also have to discuss about the related and important aspects of the question in order to bring out a complete picture of the issue in hand.

Key demand of the question.

The question wants us to write in detail as to why it is difficult if not impossible to stop stubble burning by imposing bans and fines. It also wants us to discuss as to what should be the way forward and what measures need to be take while dealing with this problem.

Structure of the answer

Introduction– *write a few line about the Stubble burning. E.g Paddy stubble burning in the months of October and November is a major contributor to Delhi's air pollution woes, which reached the highest this year, recently.*



Body

Discuss why there is a need to stop stubble burning in terms of cons of stubble burning. E.g It causes loss of nutrients, smoke and particulate pollution that can move over long distance; Damage to electrical and electronic equipment from floating threads of conducting waste; Risk of fires spreading out of control; There is a perception that stubble burning contributes to atmospheric CO₂. However carbon dioxide releases are only slightly greater than those from natural decomposition etc.

Discuss why bans and fines won't control stubble burning in terms of the pros of stubble burning. E.g It quickly clears the field and is the cheapest alternative; Kills weeds, including those resistant to herbicide; Kills slugs and other pests. Can reduce nitrogen tie-up etc.

Discuss the way-forward e.g. The most efficient technology to counter crop burning at the moment, seems to be the Turbo Happy Seeder (THS); Another use of paddy straw will be as fuel in a power plant; to produce ethanol from paddy straw.

Conclusion – Based on your discussion form a fair and a balanced conclusion on the given issue.

Background:-

- Pollution in Delhi has reached hazardous levels with potentially serious health effects on people, especially on children, the elderly and physically vulnerable people. Besides host of other facts, **stubble burning is one of the critical reason** for the pollution levels.

What is stubble burning?

- Stubble burning is a common practice followed by farmers in the neighboring states Haryana and Punjab to prepare fields for sowing of wheat in November as there is little time left between the harvesting of paddy and sowing of wheat.
- Stubble burning results in emission of harmful gases such **carbon dioxide, sulphur dioxide, nitrogen dioxide along with particulate matter.**
- **Advantages of stubble burning :-**
 - It quickly clears the field and is the cheapest alternative
 - Kills weeds, including those resistant to herbicide
 - Kills slugs and other pests
 - Can reduce nitrogen tie-up
- **Need to stop stubble burning :-**
 - It causes loss of nutrients, smoke and particulate pollution that can move over long distance
 - Damage to electrical and electronic equipment from floating threads of conducting waste
 - Risk of fires spreading out of control
 - Burning of agricultural biomass residue, or Crop Residue Burning (CRB) has been identified as a major health hazard. In addition to causing exposure to extremely high levels of Particulate Matter concentration to people in the immediate vicinity, **it is also a major regional source of pollution, contributing between 12 and 60 per cent of PM concentrations** as per various source apportionment studies.
 - An increase in finer black carbon (BC) particles and greenhouse gases from crop residue burning (CRB) has made the Indo-Gangetic basin a global hotspot for atmospheric pollutants and a place for recurring winter haze and toxic fog.

Bans are not the solution:-

- Crop residue burning was notified as an offence under the Air Act of 1981, the Code of Criminal Procedure, 1973 and various appropriate Acts. In addition, a **penalty is being imposed on any offending farmer.** Village and block-level administrative officials are being used for enforcement.
- Punjab and Haryana have banned it, and a stiff fine is levied Rs 2,500 for two acres and up to Rs 15,000 for larger areas. Despite this, stubble burning goes on.
- Stubble burning is fairly common in China too despite a government ban.

Reasons why this menace is still continuing:-

- **Labour intensive process:-**
 - There is a very short window of time between harvesting of paddy and cultivation of wheat, at the end of the Kharif season.
 - **Removal of the paddy stalk that remains on the field is a labour-intensive process.** With labour being unavailable and the time window for preparing the field for wheat cultivation being limited crop residue is burnt in the fields by farmers after harvesting during October–November.



- The problem becomes severe in winters when large parts of northern India choke on smog and haze triggered by large scale crop residue burning.
- **Technological limitations:-**
 - The power generation technology using paddy straw could not become a commercially viable business model due to the fact that it involved high costs of production
 - **National policy on biofuels supports G-2 technology for ethanol production from paddy straw.** However an alternative technology of production of methane gas through anaerobic digestion provides 37% more energy compared to ethanol production by fermentation.
 - Governments have been issuing orders to fine those farmers found burning crop residue in accordance with NGT directions but these orders have been largely defied by farmers who find no other alternative to burning. Farmers hold the view that alternatives are costly.
 - For instance Zero tillage technology requires purchase of costly machines beyond their reach. India also lacks skilled personnel but we will also require tractors with higher horsepower to drive the zero-till machines.
 - **Policy confusion and failure:-**
 - Farmers have to be convinced that their yields will not suffer should they choose to use a Happy Seeder. **States have not initiated this crucial first step at** least not in desirable numbers.
 - **The national policy on biofuels** does not cover support to bio-CNG produced from paddy straw in the form of minimum support price for straw
 - **Lack of coordination** between the Ministry of Agriculture and Farmers' Welfare and Ministry of New and Renewable Energy as policy documents create confusion among the state governments, which are supposed to tackle the issue of paddy straw burning under the directions of NGT.

What needs to be done?

- The farmers are willing to avoid paddy straw burning provided they get an assured price for it. **The conversion of paddy straw into generation of bio-CNG can be a game changer.**
- **A common agency like the National Institution for Transforming India (NITI) Aayog, can play coordinating role better** by involving different ministries and experts. The states need to be given a solution acceptable to all the stakeholders.
 - In order to tackle this problem, there is a need to take a relook at the national policy on biofuels, and budgetary allocation of 1,151 crore for machinery subsidy in light of the emergence of new and efficient technologies for bio-CNG, ethanol, and manure production
- Stronger monitoring and enforcement mechanism through the use of remote sensing technology—use of real-time satellite imagery, along with village-level enforcement teams with the aim of zero incidence rate of crop residue burning, through prevention and penalisation.
- **Policy approaches to be followed:-**
 - The Union Ministry of Agriculture and Farmers Welfare has also announced a scheme to promote mechanisation of agriculture that envisages proper management of crop residue. The top two decision-making committees dealing with the scheme don't have any representative from the states. **It would be prudent to include a representative from Punjab because two-thirds of the total paddy burning in the country occurs in the state. A practising local zero-till farmer should be included in all district-level committees.**
 - The capacity of the KVKs to reach out to lakhs of farmers is very limited. **These central government-funded institutions must work under the guidance of state-appointed nodal agencies not vice-versa.**
 - A far better alternative would be to invest Rs 5,000 per month for six months on a peer farmer-led person-to-person outreach programme. This programme that will use the services of trained village-level workers should run for two years.
 - **Establishment of a larger number of biomass-based power projects utilising greater amounts of paddy straw is needed.**
 - **Effective and greater scope of subsidy provision**, so that agricultural implements can be made widely available:-
 - One way forward is to promote the co-ownership model. There are more than 1700 existing cooperative and privately-run Agricultural Machinery Service Centers (AMSC), which can be the focus of such subsidies. It is important that the farmer understands the value of the crop residue and wants to use these implements for extraction and packaging.



- **Creation of a market for paddy straw**, along with a mechanism for commercial procurement of paddy straw for use in biomass-based power projects, as fuel in brick kilns and in production of ethanol. Establishment of bio-refineries for utilisation of paddy straw is another viable option.
- **Utilisation of paddy straw in the form of biomass pellet fuel**, which can be commercially sold as the main fuel for an industrial boiler, as a replacement for coal. Micro-pelletisation establishments need to be incentivised and local usage promoted.

Q) Discuss the objective and the essential principles of the Draft National Forest Policy, 2018. (250 words)

Reference

Why this question

The Draft National Forest Policy, 2018 is an important policy document. It is important to know about the objectives and the principles of the document so that any further discussion can be taken thereupon.

Directive word

Discuss- this is an all-encompassing directive which mandates us to write in detail about the key demand of the question. we also have to discuss about the related and important aspects of the question in order to bring out a complete picture of the issue in hand.

Key demand of the question.

The question wants us to write in detail about the objectives of Draft National Forest Policy, 2018 and the essential principles envisaged under it.

Structure of the answer

Introduction: *write a few introductory lines about the Draft National Forest Policy, 2018. E.g The main drawbacks of forest policies of 1894, 1952 & 1988 policy prescriptions were reduction in the diversion of forest land, increasing population, industrialization etc which became root cause for formation of Draft National Forest Policy, 2018*

Body-

Discuss the objective of the draft policy. E.g The overall objective and goal of the present policy is to safeguard the ecological and livelihood security of people, of the present and future generations, based on sustainable management of the forests for the flow of ecosystem services.

Discuss the essential principles of the policy. E.g Existing natural forests should be fully protected and their productivity should be improved. Management of the natural biodiversity rich forests for maximising the ecosystem services for ecological security of the nation. For conservation of flora, fauna and total biodiversity, the network of national parks, sanctuaries, conservation reserves, community reserves, biosphere reserves and important wildlife corridors and biodiversity heritage sites will be strengthened and extended adequately.

Conclusion– *based on your discussion, form a fair and a balanced conclusion on the given issue.*

Background:-

- Forests are very important economically, ecologically and even for the survival of the human kind. The new draft policy seeks to replace the country's 30-year-old national forest policy.
- In the light of the contemporary challenges like climate change, human-wildlife conflict, intensifying water crisis, increasing air and water pollution and deteriorating environment a new policy is necessary.

Draft national forest policy 2018:-

- **Objective:**
 - The overall objective and goal of the present policy is to safeguard the ecological and livelihood security of people, of the present and future generations, based on sustainable management of the forests for the flow of ecosystem services.



Essential Principles of Forest Management pursued in this policy :

- **Existing natural forests should be fully protected and their productivity improved.** Adequate measures will be taken to increase rapidly the forest cover on hill slopes, in catchment areas of rivers, lakes and reservoirs and ocean shores and, on semi-arid, and desert tracts.
- **Productivity of the forest plantations will be increased** through scientific and technological interventions so as to encourage usage of more timber so that the dependency on other high carbon footprint wood substitutes is reduced.
- **Management of the natural biodiversity rich forests for maximising the ecosystem services** for ecological security of the nation.
- For conservation of flora, fauna and total biodiversity, the network of national parks, sanctuaries, conservation reserves, community reserves, biosphere reserves and important wildlife corridors and biodiversity heritage sites will be strengthened and extended adequately.
- **Afforestation with suitable species will be intensified** so as to cater to the needs of the rural population for fuel wood and small timber. Further alternative sources of energy like LPG etc will be promoted in rural areas to reduce dependency on forests.
- **Non-Timber Forest Produce (NTFP)** such as medicinal and aromatic plants, oil seeds, resins, wild edibles, fibre, bamboo and grass etc. will be sustainably managed for improving the income of the tribals & other forest dependent populations.
- **Promotion of trees outside forests & urban greens** will be taken up on a mission mode for attaining the national goal of bringing one third of the area under Forests & trees cover and also for achieving the Nationally Determined Contribution (NDC's) targets of the country.

Way forward:-

- A production forestry system in place in the form of Forest Development Corporations (FDC), is needed
 - **With close to 1.3 million ha of forestland under their control, FDCs need technical and financial support to improve the productivity of their plantations.** The private sector can partner with FDCs and increase the productivity of this land
- Agroforestry can be further scaled up by removing restrictive regulations and providing incentives and operational support systems. **FDCs and agroforestry can meet India's wood demands.**
- **International experiences :-**
 - In Brazil and Colombia the deforestation rate has been reported to be two times lower in **community controlled forests** as compared to those not under community management.
 - The forest departments in these countries have reversed their roles from being owners and regulators of forests to becoming facilitators in community-managed forests. This is the **paradigm shift required in India's forest administration.**

Q) Man animal conflict is an issue that demands urgent attention. We need to find the right policy and regulatory mix to reflect that realization. Examine. (250 words)

Livemint

Why this question

This article talks about the often neglected issue of man animal conflict and establishes that it is a problem which requires immediate attention. The article also talks about the lacunae in the legislations and policies and what the way forward should be. In the backdrop of Avni case, this issue needs to be prepared.

Key demand of the question

The question expects us to first explain why man animal conflict is an issue that requires urgent attention. Next, we need to highlight the legislative steps and policy decisions taken to prevent such man animal conflict. We have to bring out the lacunae in the existing mechanisms and suggest what is the right policy and regulatory mix to reduce man animal conflict.

Directive word

Examine – When you are asked to examine, you have to probe deeper into the topic, get into details, and find out the causes or implications if any .



Structure of the answer

Introduction – highlight why the issue of man animal conflict is in news

Body

Bring out the seriousness of the problem and the fact that it impacts the vulnerable section the most. Explain that it is the negative externally of the kind of developmental model followed

Discuss the criticism of WPA, 1972 which is that the model of conservation enshrined in the WLPA is premised on creating human-free zones for the protection of rare species based on the erroneous notion that local people are the prime drivers of wildlife decline. This approach has been successful in protecting certain species, not all species

Discuss what is the right mix of policy and regulations which would enable the prevention of man animal conflict. Discuss the changes being thought of national forest policy and community management as envisaged in forest rights act.

Conclusion – Comment on the need to solve this issue as it is only likely to grow in future and discuss way forward.

Background:-

- Man-animal conflict is an existential crisis not only for the animals, but for human beings as well with data showing that about one person has been killed every day for the past three years by roaming tigers or rampaging elephants.

Reasons behind man animal conflict:-

- Unsustainable development:-**
 - Tiger reserves, national parks and sanctuaries exist only as islets in a vast sea of human, cattle and unsustainable land use.
 - People are increasingly encroaching into the country's traditional wild spaces and animal sanctuaries, where people compete with wildlife for food and other resources.
 - These conflicts have increased as elephants increasingly find their usual corridors blocked by highways, railway tracks and factories
 - Urbanisation and growth agendas alter landscape dynamics, which has a cascading effect on the ecological dynamics of wildlife. This results in ecological dislocation of sorts, wherein endangered wild animals like tigers either cause distress or land themselves in trouble
- Failure of government measures:-**
 - 'Human-Wildlife conflict mitigation' said most of the measures are dysfunctional, haphazardly implemented and therefore not effective
 - Elephants are used to travelling long distances, most of which fall outside the protected areas.
 - Wildlife experts claim that territorial animals do not have enough space within reserves and their prey do not have enough fodder to thrive on. This is forcing the wild animals to move out and venture close to human habitation in search of food.
- Primary reason for the increasing human-animal conflicts is the presence of a large number of animals and birds outside the notified protected areas.** Wildlife experts estimate that 29 per cent of the tigers in India are outside the protected areas.
- Road kill of wild animals is the new enemy to India's wildlife**
 - There is no proper land use planning and management ,cumulative impact assessments or wildlife management
 - There is n buffer zone between wildlife and human settlements
 - Monkeys along with grey langurs have adapted to urban habitats over the years.
 - Continued destruction and divergence of forest lands.

How is India dealing with man animal conflict :-

- Awareness programmes** to sensitize the people about the Do's and Don'ts to minimize conflicts
- Training programmes** for forest staff and police to address the problems of human wildlife conflicts
- Approach by **wildlife protection act, 1972** is that the model of conservation enshrined in is premised on creating human-free zones for the protection of rare species based on the erroneous notion that local people are the prime drivers of wildlife decline. **This approach has been successful in protecting certain species, not all species.**
- Providing technical and financial support for development of necessary infrastructure and support facilities for immobilization of problematic animals



- **State governments:-**
 - **Assistance to state government** for construction of boundary walls and solar fences around the sensitive areas to prevent the wild animal attacks
 - **Supplementing the state government** resources for payment of ex gratia to the people for injuries and loss of life in case of wild animal attacks
 - Encouraging state government for creation of a network of protected areas and wildlife corridors for conservation of wildlife.
- **Eco development activities in villages** around protected areas to elicit cooperation of local community in management of the protected areas.
- Supporting involvement of the research and academic institutions and leading voluntary organisations having expertise in managing human wildlife conflict situations.
- **Technology:-**
 - Information technology viz radio collars ,GPS, satellite uplink facilities are used by research institutions to monitor the movement of wild animals
- Centrally sponsored schemes of project tiger, project elephant and integrated development of wildlife habitats

Measures further needed :-

- Forest corridors linking protected areas must be maintained where they exist.
- Existing habitats have to be surveyed and improved to provide food for the elephants
- Local communities need to be educated to have reduced stress levels in elephants during conflict mitigation, no fire, no firecracker and no mob crowds.
- There is a need for a monitoring mechanism which will record and disperse information on such conflicts
- Experts suggest the other way to reduce the man-animal conflict is to increase the population of wild ungulates, namely hares and the wild boars, both of which are prolific breeders, as a prey for wild carnivores. Separate big enclosures can be made in the jungles to breed them. The excess stock can be released in the jungles at regular intervals for the wild carnivores to prey upon.
- **The draft National Forest Policy will be an overarching policy for forest management. Also there is a proposal for National Community Forest Management (CFM) Mission which will be launched soon.**

Q) In current times, man animal conflict is a reality we have to deal with and thus proactive measures are required for a healthy human animal interface. Examine. (250 words)

[Indian express](#)

Key demand of the question

The question first expects us to highlight the reasons why man animal conflict has risen so much in recent times. Next, we need to discuss the current steps being taken for dealing with the problem and how effective they are. Explain what do you understand by proactive measures and how can they help in reducing such incidents.

Directive word

Examine – When you are asked to examine, you have to probe deeper into the topic, get into details, and find out the causes or implications if any .

Structure of the answer

Introduction – *Explain the incident of killing of Avni to highlight why the issue is in news.*

Body

Discuss the reasons why such incidents of man animal conflict are on the rise – poor land management, land diversion, poor state of our forests, conservation efforts leading to increased numbers more than what we can sustain etc

Discuss how are we dealing with the situation or man animal conflict at present – designating areas as national parks etc and further protection accorded in such zones etc

Discuss the proactive measures that are required to deal with the situation – National Tiger Conservation Authority (NTCA) has brought out several Standard Operating Procedures (SOPs) to deal with various challenges of the human-tiger interface.



Conclusion – Conclude with how you think this problem can be tackled.

Background:-

- Man-animal conflict is an existential crisis not for the animals, but for human beings as well with data showing that about one person has been killed every day for the past three years by roaming tigers or rampaging elephants.

Reasons behind man animal conflict:-

- Unsustainable development:-**
 - Tiger reserves, national parks and sanctuaries exist only as islets in a vast sea of human, cattle and unsustainable land use.
 - People are increasingly encroaching into the country's traditional wild spaces and animal sanctuaries, where people compete with wildlife for food and other resources.
 - These conflicts have increased as elephants increasingly find their usual corridors blocked by highways, railway tracks and factories
 - Urbanisation and growth agendas alter landscape dynamics, which has a cascading effect on the ecological dynamics of wildlife. This results in ecological dislocation of sorts, wherein endangered wild animals like tigers either cause distress or land themselves in trouble
- Failure of government measures:-**
 - 'Human-Wildlife conflict mitigation' said most of the measures are dysfunctional, haphazardly implemented and therefore not effective
 - Elephants are used to travelling long distances, most of which fall outside the protected areas.
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- Primary reason for the increasing human-animal conflicts is the presence of a large number of animals and birds outside the notified protected areas.** Wildlife experts estimate that 29 per cent of the tigers in India are outside the protected areas.
- Road kill of wild animals is the new enemy to India's wildlife**
- There is no proper land use planning and management ,cumulative impact assessments or wildlife management
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- Monkeys along with grey langurs have adapted to urban habitats over the years.
- Continued destruction and divergence of forest lands.

How is India dealing with man animal conflict :-

- Awareness programmes** to sensitize the people about the Do's and Don'ts to minimize conflicts
- Training programmes** for forest staff and police to address the problems of human wildlife conflicts
- Providing technical and financial support for development of necessary infrastructure and support facilities for immobilization of problematic animals
- State governments:-**
 - Assistance to state government** for construction of boundary walls and solar fences around the sensitive areas to prevent the wild animal attacks
 - Supplementing the state government** resources for payment of ex gratia to the people for injuries and loss of life in case of wild animal attacks
 - Encouraging state government for creation of a network of protected areas and wildlife corridors for conservation of wildlife.
- Eco development activities in villages** around protected areas to elicit cooperation of local community in management of the protected areas.
- Supporting involvement of the research and academic institutions and leading voluntary organisations having expertise in managing human wildlife conflict situations.
- Technology:-**
 - Information technology viz radio collars ,GPS, satellite uplink facilities are used by research institutions to monitor the movement of wild animals
- Centrally sponsored schemes of project tiger, project elephant and integrated development of wildlife habitats

Measures further needed :-

- Forest corridors linking protected areas must be maintained where they exist.
- Existing habitats have to be surveyed and improved to provide food for the elephants



- Local communities need to be educated to have reduced stress levels in elephants during conflict mitigation, no fire, no firecracker and no mob crowds.
- There is a need for a monitoring mechanism which will record and disperse information on such conflicts
- Experts suggest the other way to reduce the man-animal conflict is to increase the population of wild ungulates, namely hares and the wild boars, both of which are prolific breeders, as a prey for wild carnivores. Separate big enclosures can be made in the jungles to breed them. The excess stock can be released in the jungles at regular intervals for the wild carnivores to prey upon.

Q) The looming threat of water crisis is intensified due to its inefficient usage in energy sector. Analyze. (250 words)

[The hindu](#)

Why this question

Niti Ayog has painted a bleak picture of water scenario in India. Planning and preparation must be in place to tackle this situation. The article discusses the issue of inefficient usage of water in energy sector and suggests steps on how it can be addressed. Hence this question

Key demand of the question

The question expects us to first discuss the precarious situation with respect to water that India faces, as highlighted by Niti Ayog. Next, we need to bring out the inefficiencies of water usage in energy sector and why this needs a quick fix. Finally, we need to provide suggestions and way forward.

Directive word

Analyze – When asked to analyze, you have to examine methodically the structure or nature of the topic by separating it into component parts and present them as a whole in a summary.

Structure of the answer

Introduction – *Bring out the result of CWMI by Niti Ayog to highlight the precarious situation with respect to water in India and why it needs to be addressed.*

Body

Explain that the issue gains importance because about 1498 billion cubic metres (BCM) versus 744 BCM — is the gap predicted between the demand and supply of fresh water, by 2030. In the projections that the Central Water Commission (CWC) released in 2015, the sector-wise requirement of water (that is, for drinking and domestic use, industry and energy) will rise ste

Highlight that water use in energy sector is only expected to increase. The share of water consumed by this sector was 0.62% in 2010, which is pegged to rise up to 1.37% in 2030 and 8.98% in 2050.

Discuss about the issue of inefficient water use in energy sector particularly thermal energy which is the highest water guzzler and occupies greatest share in India's energy pie. Also explain challenges relating to data collection etc

Discuss the potential solutions

Conclusion – *Emphasize on the need for water management and discuss way forward.*

Background:-

- Composite Water Management Index (CWMI) by the NITI Aayog, shows that 600 million people face high to extreme water stress in India. The report places India at a dismal 120 among 122 countries in the water quality index.
- It predicts that a persistent water crisis will lead to an eventual 6% loss in the country's Gross Domestic Product by 2030.

Water crisis is intensified due to inefficient usage in energy sector:-

- **Water and energy systems are closely intertwined.**
 - The scarcity of water in the age of climate change has impacted the coal-fired power plants particularly negatively. While water forms an essential component in all stages of energy production and electricity



generation, energy is needed to extract, convert, purify, and deliver water for a variety of human uses, and treat wastewater for auxiliary uses.

- The share of water consumed by this sector was 0.62% in 2010, which is pegged to rise up to 1.37% in 2030 and 8.98% in 2050.
- **Coal sector:-**
 - The mining of coal is very water intensive. Once water is used in processing coal, it cannot be used due to toxic contamination.
 - The water-coal slurry is stored permanently in high rise dam impoundments that can and will leak into ground water resources. These impoundments stay in communities and destroy viable farmland.
 - The effects of climate change caused by burning fossil fuels disrupts existing water resources and supplies, displaces people and undermines their livelihoods.
- **Fuel Production:**
 - Water is either an essential input or is difficult and costly to substitute; degraded water is often a waste byproduct.
- 77% of India's total electricity comes from thermal power plants that are dependent on freshwater sources. Of all the freshwater-cooled thermal plants, 38.9% of generation capacity is installed in areas with high or extremely high water-stress.

Way forward:-

- **Better reporting:-**
 - **Measuring water consumption by power plants has been a challenge for long.** However, it can easily be tackled by using the existing CEA reporting mechanism for daily generation. To do so, daily water withdrawal and consumption reporting should be mandated.
- **Collection of data:-**
 - Information about water stress, power plant siting (location) and so on must be shared seamlessly across departments a service that the Composite Water Management Index could perform.
- **Factoring in the water-energy nexus linkages**, especially the metrics around power plant water withdrawal and consumption, will only help make the Index better and the States better prepared to manage their water and power resource.
- **A transition need to be made from nonrenewable to renewable options**, from increasing supply to a wise management of the resources available and from infrastructure development to a more balanced mix of infrastructures and ecosystems for the production of the valuable water and energy services people, the economy and the environment depends on.
- **The integration between water management and energy strategies insuring ecosystems protection.**
- **Recycling and reuse of water** including when water of different qualities is used in different subsequent uses (reducing stress on energy for extraction of water from the underground water table)
- Use of renewable energies or other innovative technologies for groundwater pumping, desalination, water purification and wastewater treatment.

Q) The problem of air pollution can not be tackled by judiciary alone. Comment. (250 words)

[epw](#)

Why this question

The article highlights that courts have taken a lead in matters related to pollution and examines the effectiveness of judicial intervention. At a time when pollution has become a huge issue, and courts are taking a lead in ensuring that we enjoy the right to live in a safe environment, we need to critically analyze the role of courts.

Key demand of the question

The question expects us to bring out the seriousness of the problem of air pollution and explain that courts have taken a lead in taking steps to ensure that the problem is contained. Give examples of the measures taken by the court and explain the impact of judgements of the court. Discuss the role of executive and legislature in tackling this problem. Finally, give a fair and balanced view on whether judicial intervention to tackle pollution would suffice and suggestion about what must be done.



Directive word

Comment – When you are asked to comment, you have to pick main points and give your ‘opinion’ on them based on evidences or arguments stemming from your wide reading. Your opinion may be for or against, but you must back your argument with evidences.

Structure of the answer

Introduction – Explain that air pollution has become a big issue.

Body

- *Discuss the role played by judiciary in tackling the problem of pollution. Explain the role of NGT and Supreme court in this regard. Give examples of cracker ban in Delhi and several judgments of NGT through which they have tried to tackle the problem of air pollution*
- *Examine the effective of those measures as discussed in the article. Also, analyze the role of NGT and issues faced by NGT in tackling air pollution*
- *Discuss the lack of initiative shown by executive and legislature and why their support is crucial*
- *Give suggestions as to what needs to be done to tackle air pollution*

Conclusion – Give your view and discuss the way forward.

Background :-

- The WHO global air pollution database report that ranked 14 Indian cities among the 15 of the world’s most polluted, in terms of particulate matter (PM) 2.5 concentration, received great attention in India
- India’s urban pollution as measured by PM 2.5 level is already about 40 per cent above the global safe limits across major Indian cities. 70 per cent to 80 per cent of air pollution (as measured by PM 2.5) comes from vehicular emissions, domestic activity, construction activity, industry activity and road dust.

How judiciary is ensuring India reduces air pollution :-

- In *Arjun Gopal v Union of India (2018)*, the Supreme Court attempted to regulate the bursting of firecrackers while refusing to impose an outright ban on such firecrackers across the nation. However judgment had no serious impact on improving the air quality.
- It did also direct the Central Pollution Control Boards and equivalent state-level bodies to monitor the air quality in the short term to assess the impact of the use of firecrackers on it.
- NGT in *Ganga Lalwani v Union of India(2018)* directed the state governments of Uttar Pradesh, Delhi, Punjab, and Haryana to come up with a scheme to penalise farmers, who set fire to their fields to clear it of plant residue, by not paying them minimum support price (MSP).

Short term solutions don’t work :-

- Banning the use of private vehicles from November 1 onwards, although drastic, will definitely not be enough to curb pollution.
- Odd-even schemes and, recently, the allowance by the Supreme Court (SC) for only green or zero-emission firecrackers, are the episodic measures that have been used, and still continue to be, to combat this methodical pollution.
- **These solutions don’t work :-**
 - **Odd-even didn’t work** because, while vehicles accounted for around 9% of the city’s pollution, just a tenth was due to 4-wheelers that were affected by odd-even.
 - Pollution due to the bursting of firecrackers is relatively small, compared to road dust that contributes 56% and 38% of Delhi’s PM10 and PM2.5 pollution, respectively, and crop stubble burning according to a Harvard study, is responsible for 50% of the pollution in October and November in the NCR.
 - Though both Punjab and Haryana governments have introduced renting of machines, and subsidies for the same, that are part of the mechanised alternative, as per Down to Earth, the available lot can cover just a fifth of the acreage under paddy in Haryana in the short period farmers have between the harvest and sowing period.
 - Public transport system might not be capable of handling these numbers, especially if the Delhi government continues to overlook the establishment of dedicated bus corridors, despite increased metro coverage.
- Failure of the union and state governments in curbing crop residue burning in the areas around the National Capital Territory.



Long term measures needed:-

- Short term measures should be accompanied by measures that increase the forest cover of the land and provide farmers with an alternative to burning the remains of their crops.
- Need to speed up the **journey towards LPG and solar-powered stoves.**
- **Addressing vehicular emissions** is within India's grasp but requires a multi-pronged approach. **It needs to combine the already-proposed tighter emission norms (in form of BS VI), with a push for shared mobility and public transport and adoption of alternate mobility technologies.** While shared mobility can moderate the demand for individual vehicle ownership and usage, technology solutions today can allow for a sharp reduction in emissions per vehicle.
- **Incentives for adoption of alternate mobility technologies:-**
 - India might need to consider pushing for battery localisation. Cell investments would need a long lead-time to materialize.
- **Restrictions on elements that contribute negatively to strategic objectives (such as congestion charges on polluting technologies):-**
 - London imposes congestion charges during working hours on weekdays to vehicles entering the city centre.
 - All these disincentives to traditional cars help in the push for electric vehicles.
- **Enabling infrastructure:-**
 - There is an early need to standardise charging infrastructure/equipment to ensure interoperability and make it widespread.
- Stubble burning issue in North India need to be looked into seriously.
- Attention to non-technological aspects such as urban planning, to reduce driving, and to increase cycling, walking, and use of public transport are needed.

Q) Well-being within ecological limits requires a societal transformation redefining 'happiness'. Comment in the context of the rising environmental pollution in India. (250 words)

Livemint

Directive word

Comment- here we have to express our knowledge and understanding of the issue and form an overall opinion thereupon.

Key demand of the question.

The question wants us to express our opinion on the rising environmental pollution in India and the requirement for social transformation in order to secure well-being within ecological limits.

Structure of the answer

Introduction– write a few introductory lines about the increasing environmental pollution in India.

Body-

Discuss why there is a need to redefine happiness and how it should be defined in order to stay within the ecological limits. E.g mention consumerism as a major driver of ecological degradation and environmental pollution; In addition following technological solutions for the consequences of human behaviour, we should really consider how to change that behaviour itself; Industrialization, infrastructure development and urban consumption patterns cumulatively contribute to well-being; Infrastructure, rather than industry, is indispensable for the provision of services essential for human well-being. It has used up half of the material stock, has no substitute and will use up more than half the available carbon budget before saturation levels are reached around 2050. By modifying long-term trends, we can enhance the remaining budget and abate urban air pollution; Even after industrialization and infrastructure reach stabilization levels, consumption will continue to be propelled by the shift of the economy to the services sector and increasing levels of pollution from wasteful lifestyles. Two-thirds of the energy use and emissions of carbon dioxide come from cities; two-thirds of this is from vehicles etc.

Conclusion– based on your discussion, form a fair and a balanced conclusion on the given issue.



Background :-

- In the modern society happiness is equated with better standard of living however this focus has been achieved through adverse impact on environment through exploiting forests, land degradation, excessive power consumption etc leading to environmental pollution.
- Two-thirds of the energy use and emissions of carbon dioxide come from cities, two-thirds of this is from vehicles, the major cause of poor ambient air quality, and buildings and diet.
- Currently, four-fifths of the global net primary energy supply comes from fossil fuels.

Why behavioural change is necessary for redefining happiness :-

- Western countries prioritise technological solutions for the consequences of human behaviour however India need not follow the same approach. India has historically been known for living in harmony with nature. So wasteful ways of life must be questioned.
- The optimum solution is to **lower energy demand in all dimensions** while maintaining the level of energy services.
- **Consumerism** as a major driver of ecological degradation and environmental pollution need to change.
- **Buildings** account for one-third of final energy demand and one-fifth of emissions, and both are predicted to more than double by 2050. Their pattern of use is dependent on their density and size, which are shaped by behavioural norms, culture and practices of convenience, just as in the case of transport. This needs to be emphasized.
- **Transport** is the fastest growing and soon to be the largest source of pollution. With shared transport, if vehicle occupancy increases by 25% and vehicle usage per day by 75%, it delivers the same intra-urban mobility.
- Housing and roads are being seen as part of the social system, rather than the alternative of providing for automobiles. There is a focus on mobility instead of transport. **This should be the core of 'smart cities'**.
- A recent survey has pointed out that more than 80% of people in cities would prefer to take public transport if there is affordable and robust last-mile connectivity. Significantly, six out of 10 non-users of public transport were willing to shift provided safety, coverage and frequency were improved.
- Minute changes in one's home like restricting consumption of power, judicious use of petrol, water etc can lead to happiness for the future generations.

Topic – Disaster and disaster management

Q) The problems related to droughts are more a cause of lack of policies and mechanisms to drought-proof susceptible areas. Examine. (250 words)

Indian express

Why this question

The article highlights the drought like conditions in parts of Maharashtra. Year after year we see the problem of drought recurring and we react to the situation rather than proactively dealing with it. With climate change, such threats are bound to increase and we need to analyze how we respond to droughts.

Key demand of the question

The question expects us to first explain the causes of drought, whether lack of rainfall is the only reason that leads to droughts or whether the fault lies in poor planning. Thereafter, we have to highlight the lacunae in governmental policy to tackle drought. We should briefly highlight the seriousness of the problem and end with a way forward.

Directive word

Examine – When you are asked to examine, you have to probe deeper into the topic, get into details, and find out the causes or implications if any .

Structure of the answer

Introduction – Bring out the fact through relevant data that drought is a recurring problem for India and needs deeper analysis.

Body – Examine the reasons of drought to evaluate whether lack of rainfall is the sole reason and how far mismanagement of drought by government is responsible for the current state. Delve deeper



into the lacunae in governmental policies to prevent drought as well as in capacity building to withstand drought. Analyze whether we have been successful in creating natural assets, utilize our traditional water harvesting systems, our agricultural policies which have induced drought like situations in certain parts, our mismanagement of groundwater reserves etc. Discuss the impact of these gaps by emphasizing on how serious the situation has become.

Conclusion – Highlight the importance of urgently tackling this issue and discuss way forward.

Background:-

- Officially, drought is a permanent disaster that strikes, on an average, 50 million Indians every year; 33 per cent of the country is chronically drought-affected while close to 68 per cent areas are drought-prone.
- India has more than 150 years of experience in drought management. Despite this, every time the country faces a deficit monsoon, we plunge into a crisis.

Main cause of drought is due to lack of rainfall:-

- The existing problems of rainfed regions, if not addressed in time, will get more acute in the coming years due to global warming and climate change. **There would be a downward trend in the number of wet days in a year; in a country which gets rain only for less than 100 hours in a year (a year has 8,760 hours), this would be disastrous.**
- Deficient and uneven rainfall in the last two agricultural years adversely affected overall agricultural production

Measures taken:-

- In the last six decades India has spent more than Rs 3.5 lakh crore on water conservation and drought-proofing.
- Particularly, in the last one decade, the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) has helped create, on an average, 21 water bodies in every village. Some 12.3 million water harvesting structures have been built.
- India has a better monsoon forecasting system than India had before and crisis response management has improved.

However policy mechanisms are to be blamed more:-

- **Centre-state non cooperation:-**
 - Earlier, the states could approach the Centre for drought relief without restrictions of the category of drought, and ask for monetary help under the Calamity Relief Fund and the National Calamity Contingency Fund.
 - However new “Manual for Drought Management” says that the states can ask for Centre’s help only if the drought is “severe”. Also the parameters that make a drought “severe” are extremely stringent.
- Maharashtra launched Jalyukt Shivar Abhiyaan to make the state drought-free by 2019 by carrying out decentralised soil and water conservation works. **But the situation on the ground remains worrisome.**
- Other contributing factors such as **rapid population growth, depletion of groundwater resources, poor water management, chronic lack of investment in storage systems, greater urbanization, consequent large-scale deforestation and leveling of water bodies like large ponds and lakes for legal or illegal constructions have added to the water problems.**
- **Water intensive crops:-**
 - Government policies such as subsidies for particularly water-intensive crops as well as heavy irrigation methods for having contributed to the problem.
 - There is a political reluctance to control water-hungry crops in low-rainfall regions, such as sugarcane in Maharashtra and paddy in Punjab.
- Successive Indian governments have for many decades **failed to invest in rural infrastructure**, particularly water storage and irrigation infrastructure, which has been a major contributor to the drought problems of India
- The policy approach to agriculture since the 90s has been to secure increased production by subsidising inputs such as power, water and fertiliser; and by increasing the minimum support price, **rather than by building new capital assets in surface irrigation, rainwater harvesting, improving credit for smallholders and evolving new drought-resistant technologies.**
 - This has shifted the production base from low-cost regions to high-cost ones, causing an increase in the cost of production, regional imbalance and an increase in the burden of storage and transport of produce.
- **Exploitation of groundwater:-**
 - **Policies have resulted in excessive use of capital on farms, such as too many tubewells in water-scarce regions.**
 - Groundwater, as opposed to surface and sub-soil water, has become the main source of irrigation, leading to more than 30% of the blocks in the country getting classified as semi-critical, critical or overexploited.



- As there is no effective control over the digging of tubewells in water-scarce regions, farmers are borrowing money from informal sources at high interest rates to dig tubewells, but many such borings fail, leading to indebtedness and even suicides.
- **Lack of participation:-**
 - The government of India has announced several programmes in soil and water conservation but, when undertaken by the agriculture department, these remain departmental in approach with no involvement of people. Maintenance of the created assets suffers, as beneficiaries are not motivated to assume responsibility for maintenance.
 - Watershed development programmes cannot succeed without full participation of project beneficiaries and careful attention to issues of social organisation. Despite the fact that MGNREGA mandates that 80% of work must be related to local water conservation and drought-proofing, the sustainability and productivity of assets created is never monitored.

Impact:-

- Impact of drought is felt directly by farmers, due to poor crop yields or crop failures, which results in reduced farm incomes, and this has **wider transmission effects throughout rural communities due to lower consumer spending by agricultural households.**
- Many farmers in India are **also deeply indebted and need good harvests to allow them to recoup financial losses and repay loans.**
- Drought is a major factor in the thousands of **farmer suicides** afflicting India over the last few decades.

Way forward:-

- A **large-scale national water infrastructure development program** that will not only use Indian public funds but also leverage international aid assistance and other forms of development finance to rapidly build up national water storage capacity is needed.
- **India need to build a much larger network of big water reservoirs** as well as regional and local water storage systems.
- In parallel, **advanced agricultural irrigation systems** should be integrated into low rainfall areas of India, utilizing advanced technology that is used in arid areas of countries such as the US, Australia and Israel
- **Modernization of urban waterworks** is also very important in order to prevent large-scale loss of water through leaking and damaged pipes.
- In the short term, however, the Indian government can take certain preemptive and proactive steps to lessen the vulnerability of people to drought.
 - This should entail **providing more financial support to farmers; staging awareness raising campaigns that teach people how to conserve water and use it more judiciously; and essentially giving people incentives to use water cautiously.**
 - Need to reduce unrestricted mining of groundwater and ensure stricter implementation of environmentally sound cropping patterns.
 - Drip irrigation and a water sprinkler approach, mulching and bed plantation, and construction of tanks and check dams should be promoted for water harvesting and conservation.
- Build efficient irrigation systems and water conservation strategies in rainfed regions, through conjunctive use of surface and groundwater. **Agriculture in semi-arid regions has to move from traditional, crop-centric farming to agri-pastoral-farm-forestry systems (fruit trees, shrubs, perennial grasses and small ruminants).**
- MS Swaminathan , as a long-term solution to drought and financial support to farmers, advocated the **implementation of the Minimum Support Price. He recommended pricing and procurement based on total cost of production plus 50 percent principal.**

Topic – Internal security.

Q) With the Arihant's nuclear deterrence patrol, India has added immeasurably to the credibility of its nuclear deterrence. Examine. (250 words)

[Indianexpress](https://www.indianexpress.com)

Why this question

India's first indigenously designed and built nuclear-powered submarine, the INS Arihant, which is equipped with nuclear-tipped ballistic missiles had just completed a nearly month-long nuclear deterrence patrol. This is a landmark development on many counts, and through this question we attempt to understand why.



Key demand of the question

The question expects us to explain how developing INS Arihant indigenously as well as INS Arihant per se has helped us strengthen our nuclear deterrence and the impact that it will have.

Directive word

Examine – When you are asked to examine, you have to probe deeper into the topic, get into details, and find out the causes or implications if any .

Structure of the answer

Introduction – *Highlight the fact that India’s first indigenously designed and built nuclear-powered submarine, the INS Arihant, which is equipped with nuclear-tipped ballistic missiles had just completed a nearly month-long nuclear deterrence patrol.*

Body

Discuss the advantages that it has for India

- *India, apart from its capability to deliver nuclear weapons both from land and from air, can now also do so from under water. It provides the ultimate credibility to nuclear deterrence as both land and air-launched nuclear weapons are much more susceptible to destruction than those launched from undersea platforms*
- *sends out an unambiguous message that efforts at nuclear blackmail will not work*
- *signifies India’s attainment of complete mastery over all the highly complex systems and procedures entailed in operating the sea leg of the triad etc*

Discuss the impact that it will have on India’s nuclear doctrine, its role as a net security provider in Indian Ocean, and its ambitions in Asia Pacific.

Conclusion – *Discuss the significance of indigenously developing arihant’s nuclear deterrence.*

Background:-

- India’s first indigenously designed and built nuclear-powered submarine, the INS Arihant, which is equipped with nuclear-tipped ballistic missiles had just completed a nearly month-long nuclear deterrence patrol. This is a landmark development to India.
- India’s nuclear deterrence 20 years after the country went nuclear is now secure as it rests on a triad of land, air and undersea vectors.

How Arihant nuclear deterrence patrol adds credibility to nuclear deterrence of India:-

- **Difficult to detect:-**
 - It provides the ultimate credibility to nuclear deterrence as both land and air-launched nuclear weapons are much more susceptible to destruction than those launched from undersea platforms which are difficult to detect.
- It sends out an unambiguous message to those inimically disposed towards India that they cannot trifle with it and efforts at nuclear blackmail will not work.
- The nuclear deterrence patrol signifies India having come off age as a mature nuclear-armed state.
 - **The Arihant’s successful nuclear deterrence patrol signifies India’s attainment of complete mastery over all the highly complex systems and procedures entailed in operating the sea leg of the triad.** These are much more intricate and exacting than those for land and air vectors. Unlike the latter, they entail not only nuclear-propelled platforms but also ab initio custody of fully mated nuclear weapons.
- The Arihant is believed to be the first in a series of six submarines. These will form the core of India’s sea-based nuclear deterrent and constitute a potent and formidable weapons system which will ensure national security. **With the serial production of Arihant-type submarines, there will be an even higher element of indigenisation.**
- With the Arihant’s nuclear deterrence patrol, India has added immeasurably to the credibility of its nuclear deterrence. **This will obviously add to national security and will be a factor for peace.**
- Analysts said the 6,000-tonne vessel with a range of about 750km sends a powerful signal to Pakistan and China that India’s underwater nuclear deterrence is credible potent and functional.



- **Arihant propels India into a club so far dominated by the US, France, Britain, China and Russia**, demonstrating India's technological capability to design, build and operate nuclear-powered ballistic missile submarines or SSBNs.
- It helps India in gaining respect from South Asian countries and beyond where Chinese economic might is impediment to India's influence. India is the only country having a sea-based nuclear deterrent, which is not a Permanent Member of the UN Security Council.

However this single achievement does not axiomatically lead to the conclusion that India's 'triad' is now complete:-

- The classical triad is **not proving to be as cost-effective** as it was once perceived.
- **India is located in a very challenging weapons of mass destruction (WMD) region**, and the fact that both its nuclear capable neighbours (China and Pakistan) are in a deep and covert WMD cooperation framework compounds the challenge for India. Also the Pakistan has also used its nuclear capability to shield its terrorism investment and the strategic picture becomes even more muddy.
- The **Arihant is estimated to have a missile with a range in hundreds of kms**. In any case, a viable triad only comes into being when India has an Ship Submersible Ballistic Nuclear Submarine on patrol all the time.
- Small fleet size, possibility of interception of communication lines etc.

TOPIC: Linkages between development and spread of extremism; Role of external state and non-state actors in creating challenges to internal security.

Q) Discuss the key challenges to India's counterterrorism efforts and also suggest solutions ? (250 words)

[Livemint](#)

[Indian express](#)

Why this question

26 Nov 2018 marks a decade of Mumbai terror attacks and forces us to rethink about the progress we have made in stepping up our counterterrorism efforts. Hence this question.

Key demand of the question

The question expects us to highlight the major challenges to India's counterterrorism efforts, explain how we are countering such challenges and discuss the way forward.

Directive word

Discuss – Here your discussion should bring out the key challenges, explain how we are dealing with them and thereafter suggest steps for the future.

Structure of the answer

Introduction – *Explain the rising challenge of terrorism and innovative ways used by terrorists which forces law agencies to upgrade themselves.*

Body

Explain about the major challenges in India's counterterrorism efforts

- *terrorism is handled by different state police systems with no legal role by the central government under Schedule 7 of our Constitution*
- *Lack of citizen participation and private sector participation in beefing up the security apparatus*
- *absence of "bottom up" security architecture*
- *Lack of coordination between agencies etc*

Discuss the ways in which we are beefing up our counterterrorism efforts by focussing on intelligence – creation of a new National Investigation Agency, Multi Agency Centers (MAC) collate intelligence information from different sources and disseminate them, stringent acts such as UAPA etc. Analyze how effective these reforms have been.



Suggest reforms – Capacities of the state police forces should be increased, cyber security and intelligence gathering and dissemination requires improvement (NATGRID) etc

Conclusion – Emphasize on the need for beefing up our counterterrorism efforts and end with way forward.

Background:-

- Terrorism has become a global phenomenon posing major threat to international peace, security and stability. Access to advance technology, including cyberspace, sophisticated communications, global funding and military grade weapons has given such groups enormous strength.
- Therefore, that terrorism constitutes one of the principal challenges at the global, regional and national levels and has become a key factor in national security planning.

Key challenges in India's counterterrorism efforts :-

- **Providing sponsorship and safe havens** have further played a major role in the phenomenal growth of global terrorism.
- In addition, **State support has granted terrorist groups access to resources**, guidance and logistics, which would normally be beyond their capabilities. Any effort to counter the activities of terrorist groups carries the danger of placing the victim nation in direct confrontation with the host nation and its resources.
- **Terrorism is handled by different state police systems with no legal role by the central government under Schedule 7 of our Constitution.** Similarly, the intelligence provided by the central government to the states is only of advisory nature.
- In many countries **concurrent powers are given to the central government to intervene when a state fails to take security measures. Unfortunately, India does not have that system.**
- Intelligence agencies which were once able to operate beyond their borders are finding it **difficult to detect transnational tentacles**, even within their country, of al Qaeda or IS.
- Lack of citizen participation and private sector participation in beefing up the security apparatus
- Absence of “bottom up” security architecture
- Lack of coordination between agencies
- India's counter-terror efforts continue to be thwarted **due to lack of international collaboration** in respect of exchange of information and evidence or of extradition of the accused persons who are hiding outside India's territory.
- **New challenges:-**
 - The **online propaganda** of the terrorist groups is radicalising the youth for instance ISIS influencing the youth

Measures taken :-

- India has taken steps for setting up of **Joint Working Groups (JWGs) on counter-terrorism/security matters with key countries.**
- **Bilateral treaties on Mutual Legal Assistance (MLATs)** in Criminal matters to facilitate investigation, collection of evidence, transfer of witnesses, location & action against proceeds of crime etc. have been signed with other countries.
- India boosted the **security-related infrastructure at the border management by launching new schemes**, and have been able to successfully minimize cross-border-infiltration.
- Similarly, Indian government has allocated substantial funds to **the police modernisation** programmes all over the country with a view to ensure quick and better response mechanisms.
- India has raised **Regional Hubs of NSG battalions in important strategic locations, to meet any unforeseen challenges.**
- India created a new Division in the Home Ministry exclusively to deal with Counter Terrorism.
- Stringent acts such as UAPA
- **Coastal security** was given high priority, and it is with **the Navy/Coast Guard/marine police.**
- A **specialised agency** to deal with terrorist offences, the **National Investigation Agency**, was set up and has been functioning from January 2009.
- The **National Intelligence Grid (NATGRID)** has been constituted to create an appropriate database of security related information.
- The **Multi Agency Centre**, which functions under the Intelligence Bureau, was further strengthened and its activities expanded.
- The Navy constituted a **Joint Operations Centre** to keep vigil over India's extended coastline.
- **Financial Intelligence Unit-IND (FIU-IND)** is the central national agency responsible for receiving, processing, analysing and disseminating information relating to **suspect financial transactions.**



- A special **Combating Financing of Terrorism (CFT) Cell** has been created in the Ministry of Home Affairs in 2011, to **coordinate** with the Central Intelligence/Enforcement Agencies and the State Law Enforcement Agencies for an **integrated approach to tackle the problem of terror funding**.

Suggestions :-

- Capacities of the state police forces should be increased
- Dealing with the **menace of terrorism** would require a **comprehensive strategy** with involvement of different stakeholders, the Government, political parties, security agencies, civil society and media.
- There is a need for **National Counter Terrorism Centre**. A **centrally co-ordinated Terrorism Watch Centre**, which could also operate as a think tank with sufficient inputs from academic and private experts.
- A strategy for fighting terror in India has to be evolved in the **overall context of a national security strategy**. To tackle the menace of terrorism, a **multi-pronged approach** is needed.
- **Socio-economic development** is a priority so that **vulnerable sections** of society do not fall prey to the propaganda of terrorists promising them wealth and equity.
- A more comprehensive approach, as embodied in the proposed Convention on Countering International Terrorism (CCIT) is required in tackling the contemporary form of terrorism.

Topic – Basics of cyber security

Q) Cyber-attacks have grown in terms of sophistication and reach in the recent times. Evaluate India's performance in tackling cybersecurity threats and whether India needs an army of ethical hackers ? (250 words)

Financial express

Why this question

The article discusses the risk posed by a bug in IRCTC website and the importance of beefening up our cybersecurity infrastructure. The sheer magnitude of the risk posed by this is immense and it's a pressing problem for the country from an internal security point of view.

Key demand of the question

The question expects us to discuss the status quo of incidents related to cybersecurity breaches that have plagued the country. Thereafter, we need to evaluate how has India responded to such breaches and how successful we have been in such efforts. Finally, we need to examine whether having an army of white hat hackers would help alleviate the problem.

Directive word

Evaluate – When you are asked to evaluate, you have to pass a sound judgement about the truth of the given statement in the question or the topic based on evidences. You have to appraise the worth of the statement in question.

Structure of the answer

Introduction – highlight the IRCTC incident to establish that this is a problem which needs serious consideration. Also explain who ethical hackers are.

Body

Discuss the current situation in India with respect to such attacks – India faces the highest number of cybersecurity threats in the Asia-Pacific region with over 500,000 alerts daily

Discuss the policy issues, infrastructural issues, capacity issues etc

Explain how can an army of white hat hackers help in preventing such security breaches. Highlight the examples of countries such as China which have already treaded on this path. Discuss any issues with this idea. You can also suggest a couple of other screws that need to be tightened for a holistic improvement.

Conclusion – Highlight that is an emerging and potentially crippling risk that the country faces and we should do everything possible to hedge ourselves against such risks.



Background:-

- Cyber-attacks have grown in terms of sophistication and reach in the recent times. India was one of the worst hit countries by the **WannaCry ransomware** malware affecting sectors such as banking, finance and manufacturing last year.
- Attacks are often anonymous and **difficult to attribute** to specific actors, state or non-state. **Advanced Precision Threats (APTs)** carried out by anonymous hackers are often silent and go unnoticed for long periods.

India's readiness and performance with respect to cyber threats :-

- The government is stepping up authority around cyber security to check the **rising menace of financial frauds**. Global Conference on Cyberspace was conducted in India for first time with a view to establish internationally agreed 'rules of the road' for behaviour in cyberspace and create a more focused and inclusive dialogue between all stakeholders on how to implement them.
- To combat cyber threat, the government is coming up with **more cyber security labs**.
- The government has earlier launched **Digital Investigation Training and Analysis Centre (DITAC)** to tackle these crimes.
 - DITACs will monitor and police cyber-crimes committed through different platforms such as mobile, email, computer and social media platforms like Twitter and Facebook.
- Apart from DITACs, the government also established **National Cyber Coordination Centre**, an operational cyber security and e-surveillance agency in India.

Criticism of India's readiness:-

- India emerged as the third most vulnerable country in terms of risk of cyber threats, such as malware, spam and ransomware, in 2017, moving up one place over previous year, according to a report by Symantec.
 - As per the report, India continues to be second most impacted by spam and bots, third most impacted by network attacks, and fourth most impacted by ransomware.
- India faces the highest number of cybersecurity threats in the Asia-Pacific region with over 500,000 alerts daily, according to cybersecurity report, Cisco 2018 Asia-Pacific Security Capabilities Benchmark.
 - Union ministries and elite security agencies, apart from government bodies, have been victims of a wide range of cyber attacks, from website defacement to ransomware.
- The Indian Computer Emergency Response Team (CERT-In), the governmental nodal agency for dealing and handling of cybersecurity threats, had less than 1% of the reported number of incidents come from security researchers.
- With the growing adoption of the Internet and smart-phones, India has emerged as one of the favourite countries among cyber criminals.
- There is growing threat from online radicalization.
- Lack of coordination among different government agencies.
- India is not a signatory to the Budapest convention which is the only multilateral convention on cyber security.

Why India needs ethical hackers :-

- **Need for efficient information security systems :-**
 - With more and more companies entering the e-commerce ecosystem and adopting new technologies like cloud computing, the threat from imminent security breaches is clearly demanding the need for efficient information security systems.
 - Cyber crimes are becoming more common and attackers more sophisticated with rouge nation-states and terrorist organisations funding criminals to breach security networks either to extort hefty ransoms or compromise national security features.
- **Shortage of manpower:-**
 - The rising threat from cyber-attacks has exposed the severe shortage of talent in this sector.
 - As per 2015 figures reported by Nasscom, India needed more than 77,000 white hat hackers as against only a mere 15,000 certified professional ethical hackers in that year.
- **Advantages of having ethical hackers:-**
 - These professionals employ methods similar to that used by malicious hackers, but they are required to be a step or two ahead of their vicious counterparts.
 - Ethical or white hat hackers may be employed by the government, banks, or private firms to prevent cyber crime.
 - They hack the system with the permission from the client and present a maturity scorecard for the network that highlights their overall risk.



- Ethical hacking firms with specially trained professionals come to the rescue of businesses while ensuring effectiveness of service and confidentiality.
 - Businesses are faced with the challenge of dealing with complex security requirements that need to be updated as per changing hacking tactics, handling hidden vulnerabilities and evolving technologies.
- **Will help many sectors:-**
 - While many new businesses are better prepared in case of cyber attacks, traditional businesses still lack the proactive understanding of the need for ethical hacking. For example, in India, banks having faced the brunt many-a-times are hiring professional help to secure their networks.
 - Hotels and other service wings of the industry seem to be lagging behind.

Issues that need to be addressed:-

- There are chances that ethical hacker performs unethical actions during the course of the hacking job.
- Solicited hacker may exceed the scope of work and venture into software sections not allowed as per the agreement.

Way Forward:

- Institutions such as the National Cybersecurity Coordinator (NCC), National Technical Research Organisation, Computer Emergency Response Team and the National Cyber Security Coordinator Centre are all doing a reasonable job. There is a need for manpower and improved coordination in these agencies.
- NCC, set up in 2015 as a part of the National Security Council Secretariat, should be strengthened to bring about a **much-needed synergy** among various institutions and to work out a **coordinated approach to cyber security**, including cyber deterrence.
- Coordination among CERTs of different countries
- Nations must take responsibility to ensure that the digital space does not become a playground for the dark forces of terrorism and radicalization.