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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.

Q) India's unemployment challenge party lies in its success in expanding education while not expanding formal sector jobs. Comment. (250 words)

The hindu

Why this question:

The Article discusses at length the problem of unemployment and in what way one needs to see rising unemployment as a function of rising education and aspirations.

Key demand of the question:

The answer must explain the causes of rising unemployment challenge in India, what are the factors responsible and how it can be resolved.

Directive word:

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

Structure of the answer:

Introduction:

Begin with brief write up on the current unemployment scenario of the country.

Body:

The answer must discuss the following:

- Quote the facts from the report from the Periodic Labour Force Survey (PLFS).
- Discuss the conditions which suggest that part of India's unemployment challenge lies in its success in expanding education while not expanding formal sector jobs.
- Explain in detail the observations taken together which suggest that the roots of India's present-day unemployment challenges lie in its very success. Educational expansion affects the unemployment debate by skewing the unemployment statistics and by creating greater competition for well-paid jobs among a rising population of educated youth. Rising prosperity allows young graduates to wait for well-paying jobs, creating an army of educated unemployed, before being forced to accept any work, frequently returning to family farms or starting small shops.
- Conclude with way forward.

Conclusion:

Conclude with solutions to overcome the challenge.

Introduction:

- The much talked about report from the Periodic Labour Force Survey (PLFS) is out.
- This was the first time that the NSSO conducted the Periodic Labour Force Survey, which is an annual survey mapping unemployment to provide a closer trace of unemployment.
- The earlier five-yearly surveys used to come with a lag of over one or two years, thus reducing the possibility of timely analysis.

Body:

Key findings in the report:

- The unemployment rate (UR) in both rural and urban India is at its highest since 1972.
- The unemployment rates among men and women in both rural and urban groups, are also the highest ever. The increase in the UR is more than three times among rural men and more than double among rural women according to the usual status since 2011-12
- The staggering increase in the unemployment rate, from 1.7% in 2011-12 to 5.8% in 2017-18 for rural men and from 3.0% to 7.1% for urban men, has generated wide ranging concerns.
- In urban areas, the unemployment rates for females are higher than those for males.
- For 15-19-year-old rural men, the proportion primarily engaged in studying increased from 64% to 72% between 2011-12 and 2017-18. As a result, while the proportion of the population aged 15-19 that is unemployed doubled from 3% to 6.9%, the unemployment rate tripled from 9% to 27%.



- Among social groups, the highest UR is among the 'General' or 'Others' category — 6.7 per cent. This group is followed by Schedule Castes (6.3 per cent), Other Backward Classes (6 per cent) and Scheduled Tribes (4.3 per cent).
- Among religious groups, Christians have the highest UR in both urban and rural areas. In rural areas, Christians have a UR of 7.4 per cent, Muslims have a UR of 6.5 per cent, Sikhs 6.3 per cent and Hindus 5.2 per cent.
- In urban areas, Christians have a UR of 11 per cent, Sikhs 9.1 per cent, followed by Muslims 8.5 per cent and Hindus 7.6 per cent.

Apart from the above, the report presents a more nuanced picture if we are to look beyond the partisan debates to policy implications of the data on employment and unemployment. Three takeaway points from these data are of particular policy relevance.

- While the unemployment rate is a frequently used measure of poor performance of the economy, under conditions of rising school and college enrolment, it paints an inaccurate picture.
- The reported unemployment rate is dominated by the experience of younger Indians who face higher employment challenges and exhibit greater willingness to wait for the right job than their older peers.
- The unemployment challenge is greatest for people with secondary or higher education, and rising education levels inflate unemployment challenges.
- It is important to recognise that in a country dominated by informal sector work, remaining unemployed is possible only for individuals whose families can survive without their immediate contributions.
- The unemployment rate has been traditionally high for men with secondary or higher level of education and this is the segment in which most of the increase in unemployment is located.

Reality of jobless growth:

- Part of India's unemployment challenge lies in its success in expanding education while not expanding formal sector jobs.
- These observations taken together suggest that the roots of India's present day unemployment challenges lie in its very success.
- Educational expansion affects the unemployment debate by skewing the unemployment statistics and by creating greater competition for well-paid jobs among a rising population of educated youth.
- Rising prosperity allows young graduates to wait for well-paying jobs, creating an army of educated unemployed, before being forced to accept any work, frequently returning to family farms or starting small shops.

Way forward:

- Recognition of rising unemployment as a function of rising education forces us to grapple with different issues than a simple focus on unemployment statistics.
- If public policies such as demonetisation are responsible for rising unemployment, we would see across-the-board increase in unemployment for all age groups.
- This phenomenon is located mainly among the young and well educated reflects a challenge that goes well beyond the temporary slowdown facing India post-demonetisation.
- Creating jobs for an increasingly educated workforce and ensuring that the new workers are well equipped to enter the labour force are twin challenges that deserve greatest priority.
- Besides promoting technical education, the government needs to focus more on creation of jobs and demand for workers since industries are unable to create sufficient job opportunities for all the technically educated people
- Policies should ensure that the education systems prepare young people for the skill demands of employers through outreach programmes, training, apprenticeships, and access to job-search assistance measures
- There should be **cluster development to support job creation in micro, small and medium enterprises (MSMEs)**. Most of the **unorganised sector employment** is in MSMEs, which tend to be concentrated in specific geographic locations.
- Private sector leaders should build capacity among unskilled and semi-skilled workers to ensure sustainability of renewable energy projects and provide opportunities to rural communities.
- Government officials should create public training programmes to prepare the poor and less educated people especially semi-skilled and unskilled for employment in the clean-energy sector.

**Conclusion:**

- India has one of the youngest populations in an aging world. By 2020, the median age in India will be just 28. Demographics can change the pace and pattern of economic growth. While China's spectacular growth has already benefited from a demographic dividend, India is yet to do so.

Q) Discuss the key highlights of 'prudential framework for resolution of stressed assets' that were recently released by RBI, also discuss significance of such steps. (250 words)

Reference**Why this question:**

The question is in the context of recently released RBI's new prudential framework for resolution of stressed assets by banks.

Key demand of the question:

The answer must discuss the key features of the new prudential framework for resolution of stressed assets by banks, also one should provide for previous efforts made in this direction.

Directive:

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:**

In a few introductory lines discuss the issues plaguing the Banks of India in terms of the stressed assets.

Body:

In brief discuss –

- The new framework for resolution of bad loans, offers a 30-day gap for stress recognition instead of the one-day default earlier.
- Lenders will have complete discretion with regard to the design and implementation of resolution plans, subject to the specified timeline and independent credit evaluation.
- enders may recognize incipient stress in loan accounts, immediately on default, by classifying such assets as special mention accounts (SMA).
- For the purpose of restructuring, the definition of 'financial difficulty' to be aligned with the guidelines issued by the Basel Committee on Banking Supervision; and,
- If multiple lenders are involved, all the lenders must enter into an inter-creditor agreement (ICA) during the review period, to provide for ground rules for the resolution plan.
- Suggest what should be the way forward.

Conclusion:

Conclude with what more needs to be done.

Introduction:

- Reserve Bank of India has come out with an updated guideline about resolving stressed assets on 7th June 2019. The new guideline on resolution of stressed asset is called Prudential Framework for Resolution of Stressed Assets Directions 2019.
- The directions have been issued in terms of the provisions of Section 35AA of the Banking Regulation Act, 1949, for initiation of insolvency proceedings against specific borrowers under the Insolvency and Bankruptcy Code, 2016 (IBC).

Body:

- It is a set of guidelines to banks for tackling their stressed assets. Significance of the Prudential Framework is that it replaces the previous controversial/stringent and Supreme Court squashed stressed asset resolution guidelines published in February 2018.

Key highlights of the PFRSAD are:

- The central bank has made it voluntary for lenders to take defaulters to the bankruptcy court i.e. to use the **Insolvency and Bankruptcy Code**.
- The norms give lenders 30 days to start working on a resolution plan from the day of default.
- A lender will now have to set aside:
 - 20% more provisions if the plan is not implemented within 210 days from the date of default
 - 35% if the plan is not implemented within 365 days of default



- Besides, the new norms said that wherever necessary, the RBI will direct banks to start insolvency proceedings for specific defaults.
- The lenders may also choose to initiate legal proceedings for either insolvency or recovery.
- Meanwhile, the norms put in place penal provisions, for lenders, for resolution plans that are not implemented.
- The RBI circular also mandated signing of the inter-creditor agreement by all lenders.
- The RBI said that lenders must put in place board-approved policies for resolution of stressed assets.
- This must include the timelines for resolution.
- RBI said that it ideally expects lenders to initiate the process of implementing a resolution plan (RP) even before a default.
- During 30 days review period, lenders may decide on the resolution strategy.
- These include the nature of the RP and the approach for implementation of the RP.
- Here, the review period for defaulters of Rs.2,000 crore and above will start immediately.
- And that for defaulters between Rs. 1,500 crore and less than Rs. 2,000 crore will start only from 1 January 2020.
- The framework now applies to a larger universe of lenders including small banks and non-banking finance companies (NBFCs).
- This essentially means that the lenders will also have to follow the early stress recognition guidelines of RBI.
- These specify that borrowers must be categorized into special mention accounts based on their delay in repayment, which are:
 - Special mention account-0 (SMA-0) loans, where the repayment overdue is between 1-30 days
 - SMA-1 where the repayment overdue is between 31-60 days
 - SMA-2 where the repayment overdue is between 61-90 days

Conclusion:

- The slower-than-expected progress under the Insolvency and Bankruptcy Code (IBC) remains the key hurdle to the timely resolution of stressed assets.
- The Reserve Bank of India's (RBI) revised framework for the resolution of stressed assets is credit positive, because it brings back the focus on the need for the timely resolution of such assets, and the build-up of loan loss provisioning against those assets.

Q) In the backdrop of recently released revised prudential framework for resolution of stressed assets, "RBI's debt resolution rules are a mixed bag", Critically analyse. (250 words)

[Livemint](#)

Why this question:

The article provides for a detailed analysis of RBI's debt resolution strategies their pros and cons.

Key demands of the question:

Answer is to analyse how the steps taken by RBI had both merits and demerits and what needs to be done to manage the current prevailing conditions of stressed assets.

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, one needs to look at the good and bad of the topic and give a fair judgement.

Structure of the answer:

Introduction

In a few introductory lines explain the role played by RBI.

Body

Discuss the role of RBI in providing for a prudential framework for resolution of stressed assets.

Discuss what are the approaches carried out by RBI in the recent past.

Explain how changes are both good and not so good – timely resolution of sticky assets through mounting punitive provisions etc. take hints from the article and list down the pros and cons.

Suggest your opinion and conclude with fair and balanced conclusion.

Conclusion

Reassert the importance of key role played by the RBI.

**Introduction:**

- Reserve Bank of India has come out with an updated guideline about resolving stressed assets on 7th June 2019.
- The new guideline on resolution of stressed asset is called Prudential Framework for Resolution of Stressed Assets Directions 2019.
- The directions have been issued in terms of the provisions of Section 35AA of the Banking Regulation Act, 1949, for initiation of insolvency proceedings against specific borrowers under the Insolvency and Bankruptcy Code, 2016 (IBC).

Body:

The norms issued will replace all the earlier resolution plans such as

- Framework for revitalising distressed assets,
- Corporate debt restructuring scheme,
- Flexible structuring of existing long-term project loans,
- Strategic debt restructuring scheme (SDR),
- Scheme for sustainable structuring of stressed assets (S4A), and
- Joint lenders' forum with immediate effect.

Key highlights of new framework:

- The new framework for resolution of bad loans, offers a 30-day gap for stress recognition instead of the one-day default earlier.
- Lenders will have complete discretion with regard to the design and implementation of resolution plans, subject to the specified timeline and independent credit evaluation.
- Lenders may recognise incipient stress in loan accounts, immediately on default, by classifying such assets as special mention accounts (SMA).
- For the purpose of restructuring, the definition of 'financial difficulty' to be aligned with the guidelines issued by the Basel Committee on Banking Supervision; and,
- If multiple lenders are involved, all the lenders must enter into an inter-creditor agreement (ICA) during the review period, to provide for ground rules for the resolution plan.

Pros:

- RBI now allows banks up to 30 days after the default to consider the future path of action, and affords them more latitude in taking defaulters to insolvency courts
- The key change here is **RBI's carrot-and-stick approach**. Lenders effectively get 30 days to negotiate with defaulters before putting in motion a 180-day resolution plan with other lenders.
- the process of kicking off a resolution plan has also been eased with assent required from only 75% of lenders by debt value, and 60% by number, unlike earlier where all lenders had to agree to the resolution plan
- the new circular now includes other lending agents like term-lending financial institutions (such as Exim Bank or Small Industries Development Bank of India), non-banking financial companies (NBFCs) and small finance banks, which somewhat evens out the misaligned regulatory plane.
- The focus remains on timely resolution of sticky assets through mounting punitive provisions.

Cons:

- By not resolving a default in effectively 210 days and by not dragging defaulters to insolvency courts, banks will have to make higher and penal provisions.
- With close to 70% of assets in the state-owned banking system, where tenured bankers have little or nil incentive to pursue resolution, the likelihood of higher provisioning acting as a disincentive is suspect.
- Two other important credit providers remain outside the regulatory ambit: mutual funds and private equity companies, which have become large credit dispensers and, in some cases, active participants in the evergreening of non-performing assets, without necessarily investing in the requisite credit appraisal skills.
- Mutual funds, in particular, have been caught on the wrong foot after lending against the security of pledged shares and with exposures to dodgy NBFCs.

Way forward:

- The onus then must shift to the government which has proclaimed the Insolvency and Bankruptcy Code (IBC) among its key achievements.
- The government has to ensure that large corporates do not game the system, as some of the large corporate defaulters have successfully done so far by arbitraging the asymmetric legal framework.
- Unlike RBI, the government has the legislative remit to construct a concrete track to insolvency courts for defaulters.

**Conclusion:**

- The slower-than-expected progress under the Insolvency and Bankruptcy Code (IBC) remains the key hurdle to the timely resolution of stressed assets.
- The Reserve Bank of India's (RBI) revised framework for the resolution of stressed assets is credit positive, because it brings back the focus on the need for the timely resolution of such assets, and the build-up of loan loss provisioning against those assets.

Q) “India’s workforce is masculinizing rapidly”, Critically analyse the statement in the light of recently released official data on Labour Force Participation Rate (LFPR). (250 words)

[Livemint](#)

Why this question:

Representation of women in India’s workforce is at a historic low, and even those who work toil long hours for low pay, shows latest employment survey.

Key demand of the question:

The answer must evaluate in detail the recently released official employment survey of India.

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, one needs to look at the good and bad of the topic and give a fair judgement.

Structure of the answer**Introduction:**

In a few introductory lines bring out the highlights of the survey.

Body:

Answers must discuss the following aspects –

- What are the concerns posed by the gender gap scenario in the employment aspect of the country?
- over three out of four women over the age of 15 in India are neither working nor seeking work. This would imply that they are most likely running the house and taking care of children.
- Then move on to explain the factors responsible for such a fall in working rates of women.
- Take cues from the article, suggest data across the sectors, women of all age groups etc.
- Suggest what needs to be done to overcome such concerns and challenges.

Conclusion –

Conclude with way forward.

Introduction:

- The recently released **periodic labour force survey (PLFS)** data published by the **NSSO** shows that **India’s female Labour Force Participation Rate (LFPR)**—the share of working-age women who report either being employed, or being available for work—has fallen to a historic low of 23.3% in 2017-18, meaning that over three out of four women over the age of 15 in India are neither working nor seeking work.

Body:**Highlights of the report:**

- Just nine countries around the world, including Syria and Iraq, now have a fewer proportion of working women than India, new official data confirms.
- If Bihar were a country, it would have the lowest share of working women in the world. Bihar has by far the lowest rates of female workforce participation, while the southern and eastern states do better.
- Among urban women who do work, domestic cleaning work is the second most common profession after textile-related jobs.
- While the LFPR for women aged 15-29 fell by eight percentage points between 2011-12 and 2017-18 to 16.4%, the LFPR for women fell by at least seven percentage points for every age bracket between 30-50 as well.
- Among women in the prime working ages of 30-50, more than two in three women are not in the workforce, with the majority of them reporting that they are “attending to domestic duties only”
- Muslim women have the lowest LFPR while among Hindu women, forward caste women have the lowest LFPR, implying that social norms and religious conservatism might play a role in women being “allowed” to work.



- rural women work overwhelmingly in agriculture, which could offer a clue to understanding the falling rates of rural workforce participation. It is likely that non-farm jobs are rare, especially for women.
- 99% of (women workers described as directors and chief executives) were self-employed, of which around one-third worked as unpaid family workers

Factors responsible for such a fall in working rates of women:

- **Maternity:** Many women who join the workforce are unable to re-join after having a child.
- The landmark legislation Maternity Benefit Act, 2017, which entitles a woman to 26 weeks of paid maternity leave, is becoming a big hurdle as start-ups and SMEs have become reluctant to hire them.
- The increased cost for companies and this may discourage them from hiring women.
- The share of women workers in the agriculture sector dropped from 42% in 2004 -05 to 35.5% in 2011-12. This decrease in FLPR in agriculture can be attributed to **increased adoption of technology in agriculture**.
- The **gender pay gap was 34 per cent in India**, that is, women get 34 per cent less compared to men for performing the same job with same qualifications.
- In the organised sector, women professionals even in the highest ranks of labour (legislators, senior officials, and managers) are also paid less compared to their male counterparts. However, these women constitute only one per cent of the total female work force and the gap is lowest as they are aware of their rights.
- **Concerns about safety and Harassment at work site**, both explicit and implicit.
- According to NSSO, urban males accounted for 16% of India's population, but held 77% of all jobs in computer-related activities in 2011-12. This shows how gender has become a discriminatory factor for certain white-collared jobs.
- **Higher Education levels of women** also allow them to pursue leisure and other non-work activities, all of which reduce female labour force participation.
- **Insufficient availability of the type of jobs** that women say they would like to do, such as regular part-time jobs that provide steady income and allow women to reconcile household duties with work.
- According to the reports, about 74 per cent in rural areas and about 70 per cent in urban areas preferred 'part time' work on a regular basis while 21 per cent in rural areas and 25 per cent in urban areas wanted regular 'full-time' work.
- **Marriage is a career stopper** for the majority of Indian women and this cultural abhorrence towards women working is a not-so-subtle way of ensuring that the escape routes out of a marriage are minimised, if not entirely closed
- Social norms about household work are against women's mobility and participation in paid work. **Childbirth and taking care of elderly parents or in-laws** account for the subsequent points where women drop off the employment pipeline.
- The **cultural baggage about women working outside the home** is so strong that in most traditional Indian families, quitting work is a necessary precondition to the wedding itself.
- When **increases in family incomes** are there, due to the cultural factors, women leave the work to take care of the family and avoid the stigma of working outside.

Way forward:

- **Non-farm job creation for women:** there is a need to generate **education-based jobs in rural areas** in the industrial and services sectors
- The **state governments** should make **policies for the participation of rural women in permanent salaried jobs**.
- The governments should also **generate awareness to espouse a positive attitude towards women** among the public since it is one of the most important impediments in women's participation in economic activities.
- Local bodies, with aid from state governments, should open more crèches in towns and cities so that women with children can step out and work. The crèches will open employment opportunities for women.
- **Supply side reforms** to improve infrastructure and address other constraints to job creation could enable more women to enter the labour force.
- **Higher social spending**, including in education, can lead to higher female labour force participation by boosting female stocks of human capital.
- **Skilling the women:**
 - Initiatives such as **Skill India, Make in India, and new gender-based quotas from corporate boards to the police force** can spur a positive change. But we need to **invest in skill training and job support**.



- The private sector could also take active part in training women entrepreneurs. For example: Unilever's Shakti program, which has trained more than 70,000 rural women in India as micro-entrepreneurs to sell personal-care products as a way of making its brands available in rural India
- **Equal pay:** The principle of equal remuneration for work of equal value that is protected by Indian law must be put to actual practice. Improved wage-transparency and gender neutral job evaluation is required to achieve this end.
- **Assuring safe access to work:** It is important to improve existing transport and communication networks and provide safe accommodation for women who travel to or has migrated for work.
- A useful and easily implementable idea would be to give **income tax benefits to women**. It would be a bold and effective step to increasing India's female workforce participation.
- For political empowerment of women, their **representation in Parliament and in decision making roles in public sphere** is one of the key indicators of empowerment.
- **Gig Economy** provides women flexible work options to pursue their career while not missing important milestones in their family lives.
- Drawing more women into the labour force, supplemented by structural reforms that could help create more jobs would be a source of future growth for India. Only then would India be able to reap the benefits of "demographic dividend" from its large and youthful labour force.

Conclusion:

- With more than 75% women not contributing to the economy, the nation is not only losing on the economic part but also the development of 50% of our population. The numeric consequences of reducing obstacles to women's full economic participation far exceed the demographic advantages of having a larger pool of young workers. It is thus high time to talk of the gender dividend along with the demographic dividend.

Q) What is the meaning of the term 'Jobless growth' ? Has India been experiencing such a growth process ? How far Skill India programme would address the jobless growth phenomenon in India ? (250 words)

[Livemint](#)

[The hindu](#)

Introduction:

- **Jobless growth is a multi-cause, systemic problem.** In a jobless growth economy, unemployment remains stubbornly high even as the economy grows.
- This tends to happen when a relatively large number of people have lost their jobs, and the ensuing recovery is insufficient to absorb the unemployed, under-employed, and those first entering the workforce.
- Jobless growth of the Indian economy is a **"5C" problem: a Complicated Condition Created by Combinations of Causes**.

Body:

Jobs scenario in India

- CMIE and labour Bureau data indicates that India continues to face the jobless growth problem
- Multiple data sources clearly show that job opportunities in India are, at present, limited, with the average annual addition to regular jobs during 2012-16 falling to 1.5 million from 2.5 million in 2004-12.
- Besides, job creation in India's organized manufacturing sector experienced a sharp fall in 2012, later recovering only to a level considerably below any prior year during 2006-12.
- Furthermore, the share of regular workers with any form of social security has declined from 45% in 2011-12 to 38% in 2016.
- the labour force participation rate has declined systematically. It was 43% in 2004-05, 40% in 2009-10, 39.5% in 2011-12 and 36.9% in 2017-18.
- Rapid advances in digital technologies and automation are displacing people from work in all sectors of the economy—in manufacturing, in services, and even in knowledge industries.

Skill India can tackle Jobless growth:

- In the words of the Mahatma, "The brain must be educated through the hand. The teacher must learn the craft and correlate his knowledge to the craft. The craft cannot be separated from education."
- Under Skill India Mission, the Ministry of Skill Development and Entrepreneurship is implementing a flagship scheme PMKVY with an objective to provide skilling to one crore people across the country for four years (2016-2020).



The **impacts of the SKILL INDIA mission** in the last 4 years are:

- NSQF **recognises prior learning**, through which an estimated **20 million school dropouts** can get a second chance.
- There is a **substantial increase** in the number of people who were skilled in FY17 and FY18. Notably, the rise is phenomenal, it has risen more than four times, from over 3.5 lakh people in FY17 to nearly 16 lakh people in FY18.
- About **30% of the skilled persons** have found jobs under the mission in FY2018.
- With nearly **55 percent successful placements**, the **Short-Term Training Program (STT)** under **PMKVY (2016-20)** has **successfully trained over 13 lakh candidates**.
- Approximately **76 percent** of the candidates have been placed in **wage employment** and **24 percent placed in self-employment/ entrepreneurship**.
- **Recognition of Prior Learning (RPL)** is designed for those who already have a job or are self-employed and require up-skilling and certification for better prospects. Till date, more than 4.5 lakh candidates have been certified under this component of **PMKVY (2016-20)**.

However, challenges remain:

- The **targets allocated are very high** and without regard to any sectoral requirement. Everybody was chasing numbers without providing employment to the youth or meeting sectoral industry needs.
- The focus of PMKVY has been **largely on the short-term skill courses**, resulting in low placements. There has been an over emphasis on this scheme and hence it is seen as the answer to all skill-related issues.
- The **Comptroller and Auditor General (CAG)** has pointed out flaws in the design and operations of the NSDC and National Skill Development Fund which has resulted in falling short of skill development goals. Majority of them also could not achieve the placement targets for the trained persons.
- The **Sharada Prasad Committee**, held the NSDC responsible for poor implementation of the **Standard Training Assessment and Reward (STAR) programme**. It highlighted that **only 8.5 per cent of the persons trained were able to get employment**. That is what has been claimed by NSDC.
- The Report also cites “**serious conflict of interests**” in the functioning of the National Skill Development Corporation. NSDC has not been able to discharge its responsibilities for setting up **sector skill councils (SSCs)** owing to lots of instances of serious conflict of interest and unethical practices.
- The skilling courses are not in line with the **Industrial Revolution 4.0** which is round the corner.
- There have been apprehensions on **how many of the 11.7 million trained in the past two years** are really in jobs.

Other supporting measures needed along with SKILL INDIA:

- Improving the labour market information system where emerging demand for skills are spotted quickly and the necessary training and certifications for the same are created.
- Quick improvements in public-private partnership in capturing demand for skills and following through with quick investments in skill-building to match demand with supply.
- Jobs and skills planning should be decentralized and it has to be done at state and district levels, where there is granular information on education, skills and job options.
- Implementing a new model of manufacturing which is high-skilled, and where high-end cottage manufacturing can create employment at the small scale level.
- If urbanization is good and well planned, then job growth will be positive. Government should concentrate on the development of towns and narrow areas and service it with good infrastructure to generate employment alongside development.
- If government starts spending on public goods (schools, hospitals, dams, roads etc.) instead of spending on freebies (deep subsidies on food, farm loan waivers etc.) the capacity of government to create employment increases.

Conclusion:

- India needs a new strategy to counter the phenomena of jobless growth. This requires manufacturing sector to play a dominant role.
- The focus of economic policy must be the creation of jobs and creating an enabling policy for youth to take up entrepreneurship and create more jobs in the market. India does not need five companies worth 5000 crores turnover but needs 5000 companies of 5 crore turnover.



Q) Indian economy, polity and demography has undergone many changes from last 70 years. In this context, is it the right time to revisit the India's Fiscal Federalism ? Critically comment. (250 words)

The hindu

Introduction:

- Fiscal federalism is **the financial relations between units of governments in a federal government system**. It is part of broader public finance discipline. The term was introduced by the German-born American economist **Richard Musgrave** in 1959. Fiscal federalism deals with the division of governmental functions and financial relations among levels of government.
- India has a federal form of government, and hence a federal fiscal system. For successful operation of federal form of government, **financial independence and adequacy** forms the backbone. The Economic Survey 2017-18 highlighted the need for fiscal federalism.

Body:

The needs to revisit the Indian fiscal federalism are:

- **Trends in Tax Revenue:**
 - A look at the composition of central and states' own taxes and expenditure reveal that the share of the own tax revenue and expenditure of the states is 38% and 58% respectively.
 - This reflects the more than proportionate expenditure obligations of the states and also the lesser revenue raising powers vis-à-vis the centre.
 - The centre has buoyant sources of revenue like personal income tax, corporation tax, excise duty, customs duty and service tax. However, the tax-gross domestic product (GDP) ratio of the centre has stagnated by 11% on an average, during the period 1970–71 to 2016–17.
- **Trends in Transfer of Central Resources:**
 - The transfer of resources to states comprises taxes collected by the Union, statutory grants under Article 275 based on the recommendations of the finance commissions, grants given as central share in centrally sponsored schemes (CSS), other discretionary grants, and until 2015–16, formula-based grants for state plans under the Gadgil formula.
 - The transfer of central resources can be broadly classified into tied and flexible grants. The former is a conditional grant which comes with a scheme and has conditionalities. The state has no flexibility in deciding how to spend it. The CSS grants fall under this category.
- **Trends in Tax Devolution:**
 - Under Article 270 of the Constitution, the net proceeds of all taxes levied by the union, except surcharges and cesses are shareable with the states after the 80th Constitutional Amendment.
 - **Net proceeds** are defined in Article 279 of the Constitution as gross tax revenue of the centre less surcharges and cesses, and cost of collection. However, the amount of net proceeds is not published in the budget documents of the union. But, the proportion of surcharges and cesses to gross tax revenue of the centre is rising, and this is neutralising the higher shares recommended by the successive finance commissions.
 - Surcharges and cesses are levied for the purpose of the union and are not shareable with the states, according to the provisions of Article 271 of the Constitution.
 - The lack of transparency in computation of net proceeds has also caused losses to the states.
- **FRBM Acts and Asymmetric Impacts:**
 - The FRBM acts were passed at the level of the centre and the states in the beginning of the 2000s.
 - It laid emphasis only on achieving targets. In the bargain, if revenues could not be raised, expenditure (even essential) would be cut.
 - The states have been forced to limit their deficits due to sanctions by the finance commissions, whereas the centre is not bound by any such conditionalities.
 - The FRBM review committee recommendations have been unilaterally accepted by the centre without consulting the states. This is against the basic tenets of cooperative federalism.
- **Inefficient Cash Management by States:**
 - The states do not spend essentially due to the fear of the consequences of non-adherence to deficit targets, which are not only a legislative constraint but also a conditionality imposed by the finance commissions.



- The perversity of this is such that states are not only forced to adhere to deficit targets, but also to provide cheap financing to the centre, which has not adhered to deficit targets noted in the FRBM acts.
- **Post-GST Scenario**
 - The voting rights in the GST Council are in the provisions of Article 279A of the Constitution. The states have two-thirds and the centre one-third voting rights. But to pass a resolution, three-fourths majority is required. This in effect confers a **veto power for the centre**, even when states jointly propose a change. The states should be able to adopt a change in their tax structure without the centre's consent. The voting rights envisaged under Article 279A has made this impossible.
 - The committee on **revenue neutral rates (RNR)** of the central government had suggested the apportionment between the states and the centre at 60:40 ratio, as almost 44% of states' own tax revenue was subsumed under the GST as against 28% for the centre. It still retains the power to levy additional excise duty on tobacco products, even though it has been brought under the GST. States do not have such a right.
 - The centre also took a long time in implementing the anti-profiteering clause of the GST.
- **ToR of the Fifteenth Finance Commission:**
 - There is an apprehension that it will reduce the states' capacity to intervene in social and economic sectors.
 - ToR suggests **whether there should be revenue deficit grants** at all. This is ToR is a bolt from the blue with regard to the state finances that are already stressed by the impending pay commission award implementations, the obligation to bear the future interest burden from floating UDAY bonds and stagnation in the GST revenues.
 - The proposed enlargement of restrictive conditions is a move towards fiscal centralisation and acts counter to cooperative federalism.
 - The ToR 7 also mandates the Fifteenth Finance Commission to assess and monitor performance of several aspects, including GST implementation, and other governance and achievement indicators. The finance commission's becoming a monitoring agency of states' performance does not befit its constitutional role.
- **Empowering Local Governments:**
 - The LGs in India are still a shadow of "institutions of self-government" envisaged in the Constitution.
 - A major impediment for substantial progress in decentralisation to LGs is the lack of any initiative to restructure centre-state relations in India.
 - The vast differences in the decentralisation experience across the states, which is the consequence of the varying degrees of political will.

Way forward:

- Perhaps the time has come for the Constitution to be amended and the proportion of shareable taxes that should go to the States fixed at the desired level.
- The shareable tax pool must also include cesses and surcharges as these have sharply increased in recent years. Fixing the ratio at 42% of shareable taxes, including cesses and surcharges, seems appropriate.
- Another possible route is to follow the practice in the U.S. and Canada: of allowing the States to levy tax on personal income, with some limitations.
- The freedom given to the States must be limited. It is important to note that the levy by the Centre and States together should be reasonable. Also once this power is given to the States, the transfers from the Centre need adjustment.
- **Horizontal Distribution:** The ability of bringing about equalisation across States in India has limitations. Even the relatively richer States have their own problems and they feel 'cheated' because of the overuse of the equity criterion. An appropriate balancing of criteria is needed particularly in the context of the rise in unconditional transfers.

Conclusion:

- There is an urgent need to tackle the above challenges in fiscal federalism by using the co-operative federalism to ensure socio-economic development of India.



Q) What is the potential of India's MSME sector ? Discuss the challenges and concerns associated with the growth of MSME sector in India. (250 words)

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

Why this question:

The article discusses the findings of the committee set up to undertake a comprehensive review of the micro, small and medium enterprises (MSME) sector, which has submitted its report to the RBI. It has examined issues such as access to finance and infrastructure bottlenecks that continue to plague the sector.

Key demand of the question:

The answer must discuss in detail the potential of the MSME sector and the challenges it is facing in India.

Directive:

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:

Begin with some statistics/data related to MSMEs in India.

Body:

Discussion should include the following:

- What are the issues plaguing the MSME sector? – fiscal indiscipline, lack of infrastructure, Limited capital and knowledge and Non-availability of suitable technology are few critical issues in this sector, Ineffective marketing strategy, Constraints on modernization and expansions and Non-availability of skilled labour at affordable cost.
- Explain the potential it holds in India.
- Then move on to discuss what measures need to be considered? What needs to be done?

Conclusion:

Conclude by stating that the only way to create millions of jobs with decent wages is a policy re-imagination of the rights, needs, and treatment of formal MSME entrepreneurs.

Introduction:

- Micro, Small & Medium enterprises (MSME) termed as “**engine of growth**” for India, has played a prominent role in the development of the country in terms of creating employment opportunities.
- The government, in conjunction with the Reserve Bank of India (RBI), has now launched a series of measures to alleviate their distress.

Body:

Potential of India's MSME sector:

- **Contribution to GDP:** The share of MSMEs in the **country's gross value added is estimated to be about 32%.**
- **Leveraging Exports:** It also contributes about **40% to total exports and 45% to manufacturing output.**
- **Employment Opportunities:** It employs 60 million people, creates 1.3 million jobs every year and produces more than 8000 quality products for the Indian and international markets.
- **Diversity:** There are approximately 30 million MSME Units in India and is quite diverse in terms of its size, level of technology employed, range of products and services provided and target markets.
- **Fostering Inclusive Growth:** MSME is constructing inclusive growth in numerous ways through promoting non-agricultural livelihood at least cost, unbiased regional development, large female participation, and providing a protection against deflation.

The challenges and concerns associated with the growth of MSME sector:

- **Access to Credit:**
 - According to Economic Survey (2017-18), MSME sector faces a major problem in terms of getting adequate credit for expansion of business activities.
 - The Survey had pointed out that the MSME received only 17.4 per cent of the total credit outstanding.
 - Most banks are reluctant to lend to MSMEs because from the perspective of bankers, inexperience of these enterprises, poor financials, lack of collaterals and infrastructure.
- **Poor Infrastructure:**
 - With poor infrastructure, MSMEs' production capacity is very low while production cost is very high.



- **Access to modern Technology:**
 - The lack of technological know-how and financial constraints limits the access to modern technology and consequently the technological adoption remains low.
- **Access to markets:**
 - MSMEs have poor access to markets. Their advertisement and sales promotion are comparatively weaker than that of the multinational companies and other big companies.
 - The ineffective advertisement and poor marketing channels makes it difficult for them to compete with large companies.
- **Legal hurdles:**
 - Getting statutory clearances related to power, environment, labour are major hurdles.
 - Laws related to the all aspects of manufacturing and service concern are very complex and compliance with these laws are difficult.
- **Lack of skilled manpower:**
 - The training and development programs in respect of MSME'S development has been. Thus, there has been a constant crunch of skilled manpower in MSMEs

Other issues:

- Low ICT usage.
- Low market penetration.
- Quality assurance/certification.
- IPR related issues.
- Quality assurance/certification.
- Standardization of products and proper marketing channels to penetrate new markets.

Measures needed:

- Government of India and banks should design plans and measures to widen easy, hassle-free access to credit.
- The RBI should bring stringent norms for Non-Performing Assets (NPA) and it will help curbing loan defaulters and motivate potential good debts. Further, according to critics, the Credit Guarantee Scheme for MSME (CGTMSE) run by SIDBI is a growing contingent liability and needs to be examined with urgency
- Government should provide enhanced development and upgradation of existing rail & road network and other infrastructure facilities in less developed and rural areas to boost growth and development of MSMEs
- There should proper research and development in respect of innovative method of production and service rendering. Further, the government should promote and subsidise the technical know-how to Micro and small enterprises.
- Government should encourage procurement programme, credit and performance ratings and extensive marketing support to revive the growth of sick units.
- Skill development and imparting training to MSME workers is a crucial step to increase the productivity of the sector. The government should emphasise predominantly on skill development and training programs

Conclusion:

- MSMEs being the growth engine of economy, there is a need to prepare a roadmap for sector in addition to the ad-hoc initiatives undertaken.
- Delineation of the objectives, vision, and mission is necessary to give clarity on the path to be treaded.
- An inclusive, sustainable vision to compete with the global MSMEs, by collaborating the industry groups, researchers, government and other stakeholders is the need of the hour.

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

Q) What do you understand by Generalized System of Preferences (GSP) ? Discuss the features in detail. Quote the reasons for which US withdrew GSP with India the repercussions of the same and what should India do ? (250 words)

Economictimes

Why this question:

The article brings out a detailed discussion of Generalized System of Preferences (GSP), US-India trade relations amidst US's withdrawal from GSP with India. The US terminated preferential tariffs to Indian exports on Friday after determining that it has not committed to provide "equitable and reasonable access to its markets" for the US.



Key demands of the question:

The answer should discuss the concept of Generalized System of Preferences (GSP), reasons of failure of the agreement between India and US, what are the repercussions of the same on India and what should India do to overcome the concerns posed by such a system.

Directive:

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:

Define what you understand by GSP.

Body:

Answer must discuss the following:

- The Generalized System of Preferences (GSP) is a U.S. trade program designed.
- Discuss its Features – These are unilateral, non-reciprocal and non-discriminatory benefits extended by U.S. to promote economic growth in the developing world by providing preferential duty-free entry for up to 4,800 products from 129 designated beneficiary countries and territories.
- Timeline: GSP was instituted on January 1, 1976, by the Trade Act of 1974. The GSP program has effective dates which are specified in relevant legislation, thereby requiring periodical reauthorization in order to remain in effect.
- Explain that the US terminated preferential tariffs to Indian exports after determining that it has not committed to provide “equitable and reasonable access to its markets” for the US.
- Some of the key reasons cited by trump administration are trade imbalance with India, no access to Indian market for us dairy, medical device industry and issues related to data localization norms.
- Benefit Restoration: As per US norms, a beneficiary country must meet 15 discretionary and mandatory eligibility criteria established by Congress to qualify for GSP. These include providing the US with equitable and reasonable market access, combating child labour, respecting internationally recognized worker rights and providing adequate and effective intellectual property rights protection.

However, reinstatement of GSP benefits is conditional.

Conclusion:

Conclude with what should be India’s way forward.

Introduction:

- The Generalized System of Preferences (GSP) is a U.S. trade program designed to promote economic growth in the developing world by providing preferential duty-free entry for up to 4,800 products from 129 designated beneficiary countries and territories.
- It was instituted on January 1, 1976, by the Trade Act of 1974. GSP has been given on non-reciprocal basis yet the US has linked it with market access and tariff reduction which is against the basic tenets of GSP.

Body:

Significance of GSP:

- It is an umbrella that comprises the bulk of preferential schemes granted by industrialized nations to developing countries.
- It involves reduced Most Favoured Nations (MFN) Tariffs or duty-free entry of eligible products exported by beneficiary countries to the markets of donor countries.
- Economic growth and development in the developing world by helping beneficiary countries to increase and diversify their trade with the developed nations.
- Employment – Moving GSP imports from the docks to consumers, farmers, and manufacturers supports tens of thousands of jobs in the developed nation.
- Company Competitiveness is boosted by GSP as it reduces costs of imported inputs used by companies to manufacture goods.
- GSP promotes Global values by supporting beneficiary countries in affording worker rights to their people, enforcing intellectual property rights, and supporting the rule of law.



Reasons for withdrawal of GSP:

- The United States of America (USA) President Donald Trump has terminated India's designation as a beneficiary developing nation under the GSP (Generalized System of Preference) trade program with effect from 5th June 2019.
- India no longer complied with the statutory eligibility criteria.
- The trigger for the latest downturn in trade ties was India's new rules on e-commerce that restrict the way Amazon.com Inc. and Walmart-backed Flipkart do business in a rapidly growing online market set to touch \$200 billion by 2027.
- That, coming on top of a drive to force global card payments companies such as Mastercard and Visa to move their data to India and the imposition of higher tariffs on electronic products and smartphones, left a broader trade package the two sides were working on through last year in tatters.

Repercussions of withdrawal of GSP on India:

- India exports nearly 50 products of the 94 products on which GSP benefits are stopped.
- India is the largest beneficiary nation under the GSP scheme and exported goods worth \$6.35 billion to the U.S. under the preferential regime last year.
- This is close to 10% of the goods exported by India to the U.S. While the Indian reaction to the American decision has been mild so far that the Commerce Ministry termed it "unfortunate".
- The GSP removal will leave a reasonable impact on India as the country enjoyed preferential tariff on exports worth of nearly \$ 5.6 billion under the GSP route out of the total exports of \$48 bn in 2017-18.
- Removal of GSP indicates a tough trade position by the US; especially for countries like India who benefited much from the scheme.
- India is the 11th largest trade surplus country for the US and India enjoyed an annual trade surplus of \$ 21 bn in 2017-18.

Way forward:

- Indian exports to the US under GSP program are mostly intermediaries and are not in direct competition with US producers which ultimately benefit US economy.
- The US should consider continuing India's eligibility as a gesture of goodwill that reaffirms its commitment to the mutually beneficial relationship between our two countries.
- GSP remains a central aspect of the overall trade engagement and must remain available for Indian exporters keen to address the US markets.
- India needs to ensure a similar level of economic engagement with the rest of the world.

Q) Do you think Foreign Contribution (Regulation) Act violates international human rights standards on freedom of association? Critically examine. (250 words)

The hindu

Why this question:

Recently Union Home Ministry has warned of taking penal action against NGOs who have changed office bearers without taking its approval.

Key demand of the question:

The answer must evaluate in detail FCRA, and the recent actions taken in this direction by the govt.

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, one needs to look at the good and bad of the topic and give a fair judgement.

Structure of the answer

Introduction:

In a few introductory lines state what is FCRA – The Foreign Contribution Regulations Act (FCRA) is used to regulate foreign contribution (especially monetary donation) provided by certain individuals or associations to NGOs and others within India.

Body:

Answers must discuss the following aspects –

- What are the concerns associated with the FCRA?



- Explain the recent steps taken by the govt. – In a notification, Union Home Ministry said, some incidents have come to light that some NGOs, having registered under Foreign Contribution Regulation Act (FCRA), have changed their office bearers without its approval.
- The Home Ministry said, replacement of key functionaries of FCRA registered organizations without prior permission is a violation of the law.
- The Ministry has asked the NGOs to submit applications for addition or deletion or any change of details about office bearers within one month from the date of issue of notice.
- Conclude with what needs to be done to overcome such concerns and challenges.

Conclusion –

Conclude with way forward.

Introduction:

- Foreign Contribution Regulation Act (FCRA) is a consolidating act passed by the Government of India in the year 2010. It seeks to **regulate the foreign contributions or donations and hospitality (air travel, hotel accommodation etc) to Indian organizations and individuals** and to stop such contributions which might damage the national interest.
- Since the Act is internal security legislation, despite being a law related to financial legislation, it falls into the purview of Home Ministry and not the Reserve Bank of India (RBI). The Home Ministry has warned NGOs, who have changed their office-bearers and key functionaries without informing the Ministry, with penal action, if they fail to do so within a month.

Body:

Need for FCRA:

- It is an act passed for **regulating and prohibiting the acceptance and utilization of foreign contribution or foreign hospitality by companies, associations or individuals for such activities that could prove to be detrimental to the national interest** and for matters connected therewith or incidental thereto.
- The act aims at keeping a check on foreigners influencing the Indian electoral politics, journalists, public servants etc. for wrong purposes or activities detrimental to the public interest.
- Those violating the provisions of FCRA can be jailed up to a term of 5 years

Concerns with FCRA:

The Act imposes various conditions on the use of foreign funds and some of them are as follows:

- The Act permits only NGOs having a definite cultural, economic, educational, religious or social programme to accept foreign contribution, that too after such NGOs either obtain a certificate of registration or prior permission under the Act.
- All funds received by a NGO must be used only for the purpose for which they were received.
- Such funds must not be used in speculative activities identified under the Act.
- Except with the prior approval of the Authority, such funds must not be given or transferred to any entity not registered under the Act or having prior approval under the Act.
- Every asset purchased with such fund must be in the name of the NGO and not its office bearers or members.
- In order to be registered under the FCRA, an NGO must be in existence for at least three years and must have undertaken reasonable activity in its field for which the foreign contribution is proposed to be utilised. Further, it must have spent at least INR 1,000,000 over three years preceding the date of its application on its activities.
- The registration certificate is valid for a period of five years and must be thereafter renewed in the prescribed manner.
- NGOs not eligible for registration can seek prior approval from FCRA for receiving foreign funding. This permission is granted only for a specific amount of foreign funding from a specified foreign source for a specific purpose. It remains valid till receipt and full utilisation of such amount.

FCRA and NGO's:

- NGOs play an important role in the upliftment of the weaker sections of the society and their overall development.
- This is especially true in the case of India, where a vast majority of its population continues to remain under the poverty line and have little or no access to even basic facilities provided by the government.
- Every NGO registered or having prior approval under the Act must file an annual report with the Authority in the prescribed form.
- This report must be accompanied by an income and expenditure statement, receipt and payment account, and balance sheet for the relevant financial year.



- For financial years where no foreign contribution is received, a 'NIL' report must be furnished with the Authority.
- In case of non-compliance with provisions of the FCRA, the government can penalize an NGO. For example, if these NGOs don't file annual returns, the government can issue a show-cause notice and subsequently, suspend or cancel their foreign funding licenses.
- In the last two years, licenses of around 20000 NGOs have been cancelled by the central government after they were found violating various provisions of FCRA act. Hence those NGOs were barred from receiving any foreign funds.

FCRA and spirit of international laws:

- According to the UN Special Rapporteur on the Rights to Freedom of Peaceful Assembly and of Association – the FCRA provisions and rules “are not in conformity with international law, principles and standards” because:
- Access to resources, particularly foreign funding, is a part of the right to freedom of association – is a part of Universal Declaration of Human rights (Article 20), meaning a violation of this right constitutes a human rights violation.
- Restrictions in the name of “public interest” and “economic interest” as listed under the FCRA rules fail the test of “legitimate restrictions”. The terms are too vague and give the state excessive discretionary powers to apply the provision in an arbitrary manner

Way forward:

- A **National Accreditation Council** consisting of academicians, activist, retired bureaucrats should be made to ensure compliance by NGOs.
- There should be better coordination between Ministries of Home Affairs and Finance in terms of monitoring and regulating illicit and unaccounted funds.
- A regulatory mechanism to keep a watch on the financial activities of NGOs and voluntary organizations is the need of the hour.
- Citizens today are keen to play an active role in processes that shape their lives and it is important that their participation in democracy go beyond the ritual of voting and should include promotion of social justice, gender equity, inclusion etc.

Q) What do you understand by cryptocurrency? Do you think legalising the crypto market can help beneficiaries emerge from the shadows and make productive investments in an economy witnessing a digital transformation? Critically analyse. (250 words)

[The hindubusinessline](https://www.insightsias.com/the-hindubusinessline)

Why this question:

The article discusses the current conditions of crypto market world across and the pros and cons associated, it analyses how cryptocurrency is something that can not be rejected as an idea in whole, rather world has to move forward and see it as a possibility with advantages in the ongoing digital transformation.

Key demand of the question:

Explain what you understand by cryptocurrencies; there advantages, disadvantages, debate upon whether they should be allowed.

Directive:

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, one needs to look at the good and bad of the topic and give a fair judgement.

Structure of the answer:

Introduction:

Begin with brief introduction on what you understand by

Body:

Discussion should include the following: cryptocurrencies – It is a digital currency which allows transacting parties to remain anonymous while confirming that the transaction is a valid one. It is not owned or controlled by any institution – governments or private.

There are multiple such currencies bitcoin, ethereum, ripple are some of the popular ones. Currently, they are neither illegal nor legal in India.



Debate whether they should be used or banned? Discuss the Indian scenario. Weigh the pros and cons, take clues from the article, relate it to the current digital transformation era.

Conclusion:

Conclude with a fair and balanced opinion.

Introduction:

- A cryptocurrency is a digital or virtual currency that uses cryptography for security. Cryptocurrencies use decentralized technology to let users make secure payments and store money without the need to use their name or go through a bank. They run on a distributed public ledger called blockchain, which is a record of all transactions updated and held by currency holders. The most common cryptocurrencies are Bitcoin, Ethereum, Ripple, and Litecoin.
- **Facebook** has announced a digital currency called **Libra** that will roll out for use in 2020 and allow the platform's billions of users across the globe to make financial transactions online.

Body:

Benefits of legalizing the crypto market:

- Proper regulation of these currencies will "promote" a formal tax base, while keeping a tab on their use for illegal activities such as money laundering, terror funding and drug trafficking.
- Trading of bitcoins would be brought under the stock market regulator, Securities and Exchange Board of India (SEBI).
- Bitcoins can be traded on registered exchanges which will promote a formal tax base. Returns from investment in Bitcoins would be taxed.
- Use of bitcoins for illegal activities such as money laundering, terror funding and drug trafficking can be checked.
- If any foreign payment is made through Bitcoins, it would fall under the purview of Foreign Exchange Management Act,
- Cryptocurrencies have gained popularity in the last few years. Currently, they are neither illegal nor legal in many countries including India. The market cap for all crypto-currencies has just crossed \$100 billion, with most of the increase coming in the past few months.
- Banning will give a clear message that all related activities are illegal and will disincentivise those interested in taking speculative risks.
- Regulating the currency instead would signal a boost to blockchain technology, encourage the development of a supervision ecosystem (that tracks legal activities and may also assist in tracking illegal activities) and promote a formal tax base.

However, challenges remain:

- The government is wary that regulation will provide legitimacy to "what is currently ambiguous," and may lead to further rise in its valuation and end up contributing "to the investment bubble".
- A currency that is not based on any real economic activity, unlike a sovereign currency whose value is based on the relative value of a tradeable basket of goods and services, cannot prima facie inspire much comfort.
- Bitcoin's value, astronomical even now at about \$8,300 but much below January 2018's stratospheric levels, is based on demand for a fixed supply of Bitcoins in the future it cannot exceed 21 million in number, of which 18 million has already been mined.
- Cryptos are feared not just for their sheer speculative propensities, but also for their capacity to undermine sovereign currencies (the latter is an exaggerated apprehension).
- Virtual currency is being traded anonymously over the Internet and used for a host of anti-national and illegal activities, from terror funding to illicit trade of arms and drugs and so on.
- The online use of this currency, was without any border restrictions or geographical constraints, resulting in danger to the integrity and sovereignty of the nation.
- However, it does not make sense to go overboard and criminalise merely adventurous crypto speculators. There are no official or other data available that point towards misuse of cryptocurrencies for illegal ends

Measures needed:

- Governments the world over have banned cryptocurrencies as a medium of exchange, and India is no exception.
- Yet in India, an estimated 30 lakh Bitcoins are reportedly in circulation. From a value of a little over ₹60,000 at the start of 2017, the Bitcoin now commands a value of nearly ₹6 lakh, with a global market cap of \$10.2 trillion. Cryptos are recognised in the US as an asset class.



- Firms like Paypal, Uber, Visa and Mastercard have all signed up as part of the consortium to control it. Each has invested \$10 million.
- Criminalising possession of cryptocurrencies will impact such investments.
- Bankers and investors now consider the cryptocurrency market at par with derivatives. The NYSE plans Bitcoin futures through a platform called **Bakkt**.

Conclusion:

- Underlying the crypto movement is a libertarian belief: Cryptos are an alternative asset to fiat currencies; controlled by none, they cannot be manipulated by governments with vested interests.
- Legalising the cryptomarket can help beneficiaries emerge from the shadows and make productive investments in an economy witnessing a digital transformation.
- Crypto conduct calls for regulation, but not outright criminalisation.

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Topic– Inclusive growth and issues arising from it.

Q) India aspires to become \$5 trillion economy by 2024. What measures need to be taken by both government and private-corporations to achieve this target ? Discuss the long term impact of unsustainable and non-inclusive growth on Indian society. (250 words)

The hindu

Introduction:

- The President of India spoke of India becoming a “Five Trillion Dollar” economy, last month. It was reiterated by the Prime Minister and was even discussed in the NITI Aayog Governing Council meet.
- India is, currently, a \$2.8 trillion economy; to reach the \$5 trillion mark by 2024, the economy would require nominal growth in dollar terms of over 12% a year. To reach \$ 5 Trillion, we need to shift our perspective from policy to projects.

Body:

Measures needed: The Government and the Private sector must work together to bring about the following measures in different sectors:

Agricultural sector:

- Encouraging public and private investments to develop infrastructure like cold chains;
- Special attention for north-eastern, eastern and rain-fed states for augmenting scope of access to institutional credit;
- Rationalisation and targeting of input subsidies towards small and marginal farmers.
- Reform in land leasing laws to promote land consolidation and contract farming.
- Accelerating the pace of public investment in agriculture and ensure greater efficiency in capital use.

Manufacturing Sector:

- A three-pillar strategy to achieve required expansion of output — focus on existing high impact and emerging sectors as well as MSMEs.
- In the defence sector, there is a need to identify key components and systems and encourage global leaders to set up manufacturing base in India by offering limited period incentives.
- Ensure incentives result in technology/process transfer.
- Where applicable, leverage Government purchases (Offset Policy), particularly for technology transfer; and ensure high-quality anchor investors capable of spurring growth of associated suppliers (including MSMEs) and offer limited period incentives to anchors, if required.
- To boost electronics manufacturing, the government should consider offering additional fiscal incentives such as a limited-period tax holiday to players investing more than an identified threshold of investment.
- Similarly for the auto and auto-components sector, encouragement of global leaders for the identified components to set up manufacturing bases, and incentivising players willing to invest more than a threshold in identified areas.
- Measures to boost manufacturing in other areas including aeronautical, space, garments, organic/ayurvedic products besides emerging areas such as biotechnology, electric mobility, unmanned aerial vehicles, medical devices, robotics and chemicals.
- For micro, small and medium enterprises, there is a need to improve access to funding by way of development of SME credit risk databases, SME credit rating, and creation of community-based funds.

Services sector:

- There is a need for focus on champion services sectors like IT, tourism, medical value travel and legal would be required to achieve the expansion of the services sector output and concerted efforts need to be made to increase exports.
- Improving rail connectivity and seamless connectivity to major attractions.
- Facilitating visa regime for medical travel.
- Allowing expatriate professional to perform surgeries in identified hospitals
- E-commerce policy and regulatory framework for logistics segment.
- To promote growth of accounting and financial services, there is a need to pitch for promoting FDI in domestic accounting and auditing sector, transparent regulatory framework, and easing restriction on client base in the accounting and auditing sector.



- To push audio visual services, measures like exploring introduction of insurance in the film industry, promoting private investments in film schools, exploring franchise business models to exploit film franchise, and promoting gaming industry value chains.
- The scope for expansion into advisory, arbitration and mediation services is large and unexplored.
- A clear roadmap for domestic reforms in the sector, liberalisation and promotion of arbitration and mediation services must be developed
- For the education sector, allowing foreign universities to set up campuses in India, easy visa regime for students and education service providers, removing regulatory bottlenecks, providing recognition of online degrees and setting up appropriate evaluation techniques for online courses

Other measures:

- Select sectoral initiatives can be converted into 100 projects.
- Each to be led by a competent leader with proven skills.
- They must report to the PM.
- The regular bureaucracy would facilitate the job of the project leader, who will be free to choose her team.
- States need to recognise their core competence and aim to increase their economy by 2-2.5 times, which is roughly the size of the current deficit.

The long term impact of unsustainable and non-inclusive growth on Indian society:

- An economy, whatever its size, cannot be meaningfully evaluated independently of the extent of presence in it of natural capital.
- Till now, by referring to the imperative for growth, to eradicate poverty, any effort to conserve nature has not just been ignored but treated with derision, by both right and left.
- Two-thirds of the world's most polluted cities are in India, when we accept less than a fifth of its population.
- Air pollution shortens lives and lowers productivity, reducing the capacity to earn a living when alive.
- The poor are the most affected as they cannot afford to live in gated communities that somehow manage to commandeer scarce natural resources. Some part of environmental depletion in India is due to the pursuit of unbridled growth.
- Gender inequality manifested as women having less opportunity in life is not going to go away with a re-distribution of income along class lines or across social groupings.

Way forward:

- India needs to carry out the crucial internal reforms that will allow it to be a productive international player and to take on the leadership roles that so many people across the world hope that it will.
- Any improvement in the life of the majority would require a re-alignment of the growth process so that it is less damaging.
- This would very likely require that we have slower growth but the process can be configured to channel more of it towards poorer groups.
- India could and should aspire to double-digit growth. Without sustained growth at that all levels it has little hope of employing the roughly one million young people who join its workforce every month.
- And unless it takes advantage of its current, favourable demographics it is never likely to emerge as an upper-middle-income economy with a prosperous and thriving middle class.

Q) By considering India's socio-economic conditions into account, how do you define Inclusive Growth ? Discuss how core components of Inclusive growth would help to transform India into New India ? (250 words)

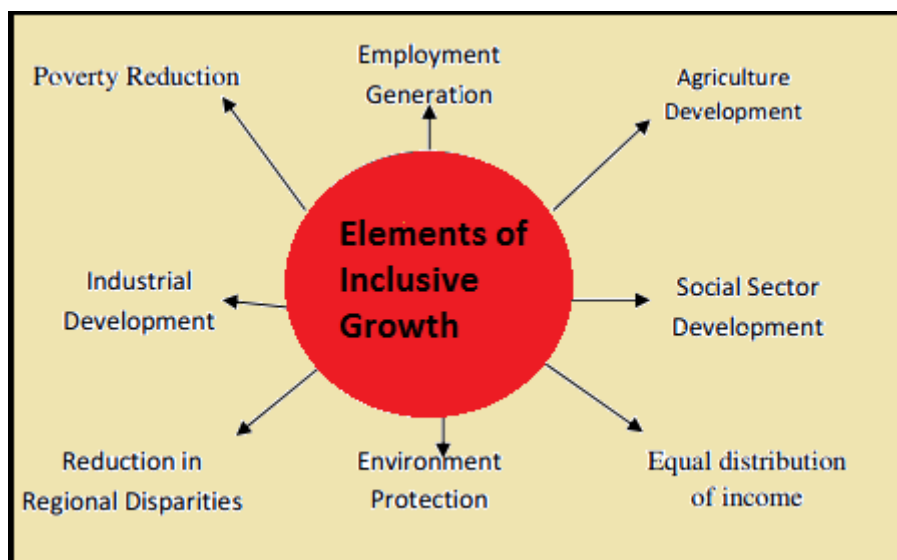
Reference

Introduction:

- The concept of **inclusive growth focuses on equitable growth for all sections of society**. This involves ensuring that fruits of growth and development reach the poor and marginalized sections as well. Inclusiveness is a multi-dimensional concept.
- Inequalities that include, social exclusion, discrimination, restrictions on migration, constraints on human development, lack of access to finance and insurance, corruption – are sources of inequality and limit the prospect for economic advancement among certain segments of the population, thereby perpetuating poverty

**Body:**

- The Twelfth Five Year Plan of the erstwhile Planning Commission highlighted the desirability towards inclusive growth.
- The Plan highlights the objectives of inclusive growth as the following: Inclusive growth should result in lower incidence of poverty, broad-based and significant improvement in health outcomes, universal access for children to school, increased access to higher education and improved standards of education, including skill development.
- It should also be reflected in better opportunities for both wage employment and livelihood, and an improvement in the provision of basic amenities like water, electricity, roads, sanitation, and housing. Particular attention needs to be paid to the needs of the SC/ST and OBC population (Planning Commission 2011).



- Economic policies that encompass growth with equity and social policies that improve the capabilities of the poor and redistributive income policies are vital to reduce poverty and income inequality.
- There is need to spread health and education far more widely amidst the population.
- Economic growth while reducing poverty does not ensure equitable income distribution. The initial conditions of land ownership, education and health and social stratification have an important bearing on the impact of growth on the equitable distribution of incomes.
- Interventionist policies that redistribute resources or entitlements have an important impact on the extent of equity in incomes that is achieved. Improvements in literacy and education reduce inequality of incomes. Public expenditure on these is very important and therefore government revenues must be adequate to enable the fiscal space for such expenditure.
- The manner of raising tax revenue could also be important in reducing inequality. Progressive income tax systems, including recurrent property taxes, high taxes on luxury expenditure of the affluent, capital gains taxes and death duties would enable better income distribution by reducing incomes of the rich and enabling policy interventions that enhance the entitlements of the poor.
- Diversification of agriculture is necessary as without the development of this sector poverty in India cannot be tackled and income inequality cannot reduce.

Steps taken by the government for Inclusive Growth:

The government has realized the importance of inclusive growth and has taken steps accordingly. Some of the steps taken by the government are:

- Sarva Shiksha Abhiyaan
- Right to Education
- Midday meal scheme
- MNREGA
- Housing for All
- Pradhan Mantri Gram Sadak Yojana
- Pradhan Mantri Jan Dhan Yojana
- National Social Assistance Programme
- National Health Mission
- Rashtriya Swasthya Suraksha Yojana



- Pradhan Mantri Jeevan Jyothi Bhima Yojana
- Skill India, Make in India and Digital India
- Right to Information
- Other initiatives like Payment Banks, Small Finance Banks.

Conclusion:

- Inclusive growth is of vital importance to fight inequality in all aspects and promote holistic development of individuals in the country.
- Inclusive growth is necessary for the sustainable and holistic development of all sections of the society. For economic, social and political empowerment of its citizens, the core components of the Inclusive growth must be tackled.

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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) Discuss how has science improved agriculture in India? With the farm sector facing headwinds what structural reforms do you think Indian agriculture requires? Elucidate. (250 words)

Livemint

Why this question:

The question is straightforward and is about discussing the role played by science in improving agriculture and the need for structural reforms in Indian agriculture system.

Demand of the question:

The answer must discuss the role of science and technology in agricultural improvement along with need for structural reforms to move into Agriculture 2.0.

Directive word:

Elucidate – Give a detailed account as to how and why it occurred, or what is the particular context. You must be defining key terms where ever appropriate, and substantiate with relevant associated facts.

Structure of the answer:

Introduction

Start with facts/data depicting significance of agriculture to Indian economy.

Body

One can have the following points in the answer:

Economic Growth: A good transportation system is an important selling point to communities that desire to attract development that provides for employment and growth of a city. If transport costs due to congestion increase, goods and services produced within that city tend to increase in costs thus losing competitiveness in international markets. Efficient transportation access is therefore a very important consideration as it has a direct impact on sound and sustainable economic growth and productivity. The cost of congestion in the Western Province of Sri Lanka is over Rs 20,000 million per year (around 2 percent of Regional GDP). This includes the cost of productive time and wastage of fuel.

Quality-of-Life: To some people, congested highways are a symptom of deteriorating quality-of-life-in a community. The amount of time that is spent on commuting to and from work is also in reality, time that is taken away from social interactions or pursuit of activities that have a personal value and satisfaction.

First explain the conditions of Indian agriculture, the problems associated, issues and concerns related to structural reforms such as – market, farm incentives, diversification etc. Then move on to explain how the issues can be addressed. Suggest way forward, take hints from the article.

Conclusion

Conclude with significance of structural reforms required and the role played by science in improvising agriculture systems of India.

Introduction:

- Agriculture has always been a lifeline for India. Even though with age, India has made a mark in various spheres and has progressed in the manufacturing sector by leaps and bounds, but agriculture still remains one of the key drivers of the economy.
- Worldwide, India ranks second in farm output and accounts for about 50% of the country's workforce. Federal policy think tank NITI Aayog, chaired by Prime Minister recently decided to set up a task force of state chief ministers and central ministers to prepare a blueprint for structural reforms in agriculture

Body:

Science and Agriculture:

- The real success of scientific farming and use of various technologies in agriculture can be attributed to the Green Revolution. In 1960s when India was grappling with frequent droughts, Green Revolution came as a God's blessing.
- The golden period in the agriculture sector, facilitated in increasing crop yields by manifolds. Improved agronomic technology allowed India to overcome poor agricultural productivity.



- A crucial aspect to the success of the **Green Revolution in India** was the various scientific technologies developed to facilitate more yields. **New farming irrigation methods such as drip irrigation, stronger and more resistant pesticides, more efficient fertilizers, and newly developed seeds helped in proficient crop growth.**
- **Krishi Vigyan Kendras (KVKs)** are the frontline agricultural extension center funded by the Indian Council of Agricultural Research (ICAR). The KVKs focus on training and education of farmers, rural youth, on field demonstration of new and improved farming techniques etc.
- The term “**evergreen revolution**”, coined by agricultural scientist Dr. M. S. Swaminathan, kept India away from large scale import of food. At that time, technology, basically digital in character, like **Remote Sensing, Geographical Information Systems (GIS), Global Positioning System (GPS) and Geo-infomatics** were not available.
- With the country developing the indigenous **Indian Remote Sensing (IRS) satellite program**, the technology started to support the national economy in the areas of agriculture, water resources, forestry and ecology, geology, watersheds, marine fisheries and coastal management.
- In 2000's, the concept of **e-farming or e-agriculture also referred as ICT in agriculture**. E-agriculture focused on the enhancement of agricultural and rural development through improved information and communication processes.
- This involved conceptualizing, designing, developing, evaluating and application of innovative ways to use information and communication technologies (ICTs) in the rural domain, with a primary focus on agriculture.
- During this time India had also started to realise the worth of **geospatial technology** in boosting its economic growth by using the technology in various fields.

However, after nearly four decades into the post green revolution period, the country still grapples with crisis each year in trying to meet the increasing demand for food by its people. **Structural reforms needed** are:

- **Credit, finance and Insurance:**
 - Raising the MSP, price deficiency payments or income support schemes can only be a partial solution to the problem of providing remunerative returns to farmers.
 - A **functional institutional credit system** which is accessible and accountable to all cultivators.
 - This covers not only land-owning farmers but also sharecroppers, tenants, adivasi and women farmers, and animal-rearers.
 - Credit products for agriculture need to be tailor-made based on cropping and rain cycle, specific to a particular region. The regional offices of commercial banks should contribute in this exercise. Registration of all cultivators and providing Kisan credit cards.
 - The period of crop loan should be extendable to four years, given that, on average, every second or third year the spatial distribution of rain pattern is erratic in India.
- **Land holdings:**
 - The average size of farm holdings **declined from 2.3 hectares in 1970-71 to 1.08 hectares in 2015-16.**
 - Policies for land consolidation along with land development activities in order to tackle the challenge of the low average size of holdings.
 - Farmers can **voluntarily come together** and pool land to gain the benefits of size. Through consolidation, farmers can reap the economies of scale both in input procurement and output marketing.
- **Input Costs:**
 - It is more important to make agriculture sustainable by reducing input costs of seeds, fertilizers and other inputs.
 - Investment in infrastructure and research and development are needed.
 - There is a need for collaboration of **industry-academia** for coming out with cost-effective solutions to agrarian distress.
 - There is a need to make a shift from rice and wheat-centric policies to millets, pulses, fruits, vegetables, livestock and fish.
- **Remunerative Prices:**
 - Extending reach of minimum support price which has been dedicated to few crops and in a narrow geographical area is important.
 - Set up of Futures and Trade markets, tie up of farmer and private companies for procurement should be looked into as alternative methods against distress sale.



- **Agro- Produce Marketing and Processing:**
 - The creation of a **competitive, stable and unified national market** is needed for farmers to get better prices.
 - For better price for farmers, agriculture has to go beyond farming and **develop a value chain comprising farming, wholesaling, warehousing, logistics, processing and retailing.**
 - The agro-processing industry and warehousing needs to expand so that agricultural produce can be stored when prices plunge.
 - Promoting viable farmer collectives to act as a “collective voice of marginal and small farmers”.
 - Legislations on the basis of NITI Aayog’s new model law — **Agricultural Produce and Livestock Marketing (Promotion and Facilitating) Act (APLM)** should be enacted in all states.
 - A sustainable solution is market reforms to enable better price discovery combined with long-term trade policies favourable to exports.
- **Technology:**
 - Use water-use efficient technologies that can improve significantly the produce like drip irrigation and sprinkler irrigation.
 - Precision agriculture, GM Crops should be encouraged drought prone areas.
 - Space technology and Mobiles should act as “Eyes and Ears” of the farmers to assist in farming.
- **Distress Management:**
 - Establish farmers’ distress and disaster relief commissions at the national and State levels, based on the model of Kerala Farmers’ Debt Relief Commission.

Conclusion:

- Although Science and Technology did help improve the situation of Agriculture but the farmer income dropped consistently due to a variety of reasons.
- There is a need for implementation of the structural reforms and recommendations of various commissions to realise the **goal of doubling of farmer’s income by 2022.**

Q) Other than pest resistance, what are the prospects for which genetically engineered plants should be cultivated? Discuss the concerns and challenges associated with their cultivation also suggest way forward. (250 words)

The hindu

Why this question:

Recently Farmer groups have alleged that Bt brinjal, a genetically modified variety, is being cultivated illegally in Haryana. India banned Bt brinjal in 2010. The debate around BT brinjal started in 2000 when Mahyco (Maharashtra Hybrid Seeds Co) came up with a GM brinjal. Seeds were exported to Bangladesh and Philippines in 2006, as the civil society resisted field trials in India.

Key demand of the question:

The answer must discuss the prospects, challenges and concerns associated with cultivation of Bt Brinjal.

Directive:

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:

Begin with brief introduction on the current context of the question.

Body:

Discussion should include the following:

What are Bt crops? What are their prospects?

Issues and concerns associated to their cultivation?

Explain the effect of it on agriculture system; farmer’s income etc. Provide for pros and cons and draw a balanced opinion.

Conclusion:

Conclude with a balanced opinion as to what needs to be done

**Introduction:**

- Genetically engineered crops (GM crops, or biotech crops) are plants used in agriculture, the DNA of which has been modified using genetic engineering methods. In most cases, the aim is to introduce a new trait to the plant which does not occur naturally in the species.
- Examples in food crops include resistance to certain pests, diseases, or environmental conditions, reduction of spoilage, or resistance to chemical treatments (e.g. resistance to a herbicide), or improving the nutrient profile of the crop. Examples in non-food crops include production of pharmaceutical agents, biofuels, and other industrially useful goods, as well as for bioremediation

Body:**Advantages of GM Crops other than pest resistance:**

- **Food Security:** Given the increased growth of global population and increased urbanisation, GM crops offer one of the promising solutions to meet the world's food security needs.
- **Improved Stress Tolerance:** Genes that give greater tolerance of stress, such as drought, low temperatures or salt in the soil, can also be inserted into crops. This can extend their range and open up new areas for food production.
- **Faster Growth:** Crops can be altered to make them grow faster, so that they can be cultivated and harvested in areas with shorter growing seasons. This again can extend the range of a food crop into new areas or perhaps allow two harvests in areas where only one is currently practical.
- **More Nutritious Crops:** Plants and animals can be engineered to produce larger amounts of essential vitamins and minerals, such as iron, helping to solve nutrition problems in some parts of the world. They can also be altered to change the amounts of protein, carbohydrates, and saturated and unsaturated fats that they contain. This could lead to the production of foods designed specifically for a healthy diet for all consumers.
- **Production of Medicines and Vaccines by Crops:** It may be possible to have plants and animals produce useful medicines and even vaccines, so that prevention and treatment of human diseases in some places can be achieved cheaply and efficiently through the diet.
- **Resistance to Herbicides:** Crops can be modified to be resistant to specific herbicides, making it much easier to control troublesome weeds. Farmers can simply apply the weed killer to a crop field, killing the unwanted plants and leaving the food crop unaffected. For example, GM oilseed rapeseed – the source of canola oil – is resistant to one chemical that's widely used to control weeds.
- **Better Tasting Foods:** Foods can be engineered to taste better, which could encourage people to eat more healthy foods that are currently not popular because of their taste, such as broccoli and spinach. It may be possible to insert genes that produce more or different flavours as well.
- **Economic benefits:** GM crops can increase yield and thus income. Genetically modified foods have a longer shelf life. This improves how long they last and stay fresh during transportation and storage.

Concerns/Challenges associated with GM Crops:

- **Human Health Risks:**
 - Potential impact on human health including allergens and transfer of antibiotic resistance markers.
 - The impact of growing GM crops poses risks to human health as their resistance to antibiotics can turn medicines ineffective and may result in the formation of new toxins and allergens.
 - Toxins produced by GM crops can not only affect non target organisms but also pose the danger of unintentionally introducing allergens and other anti-nutrition factors in foods.
- **Bio safety concerns:**
 - They can **reduce species diversity**.
 - For example, Insect-resistant plants might harm insects that are not their intended target and thus result in destruction of that particular species.
 - Cross-pollination in GM crops paves the way for herbicide-resistant super weeds that can further threaten the sustenance of other crops and pests because of its uncontrolled growth
 - GM technology could also allow the transfer of genes from one crop to another, creating "**super weeds**", which will be immune to common control methods.
 - Viral genes added to crops to confer resistance might be transferred to other viral pathogens, which can lead to new and more virulent virus strains.
- **Implications on Farmers and Consumers:**
 - Critics claim that **patent laws give developers** of the GM crops a **dangerous degree of control over the food supply**. The concern is over domination of world food production by a few companies



- **National Institute of Agricultural Economics and Policy Research's** anticipation that Bt brinjal's high yield and increased shelf life will benefit consumers and farmers owing to cut in retail price of brinjals ignores the scenario that companies might charge premium prices for Bt brinjal seeds, in which case farmers may not benefit at all.
- **Economic Concerns:**
 - Introduction of a GM crop to market is a **lengthy and costly process**. It has not resulted in high yields as promised.
 - For instance, the highest yields in mustard are from the five countries which do not grow GM mustard — U.K., France, Poland, Germany and Czech Republic — and not from the GM-growing U.S. or Canada.
- **Inefficient Regulatory system:**
 - Seeing the lapses in the regulatory system and irregularities in the assessment of Bt brinjal (in terms of labelling and unapproved and illegal sowing of GM crops) Parliamentary Standing Committee on Agriculture and the Committee on Science & Technology, Environment and Forests recommended:
 - A thorough probe by a team of eminent independent scientists and environmentalists for commercialization of GM crops.
 - Endorsed labelling GM foods to protect a consumer's right to know.
- **Ethical Concerns:**
 - Violation of natural organisms' intrinsic values by mixing among species.
 - There have also been objections to consuming animal genes in plants

Way Forward:

- The government must take decisions on GM technologies on the basis of scientific evidence.
- Need to start cultivating an environment of openness and transparency to allay genuine fears
- The government should adopt a participatory approach to bring together all stakeholders to develop regulatory protocols that restore trust in the process.
- There is a significant uncertainty over their safety, so precautionary principle is that country shall wait till a broader scientific consensus is achieved.
- Need for better policy, pricing and to rationalize the input costs
- GEAC needs to be a transparent body. it should put it in the public domain that on what grounds it has approved GM mustard
- There has to be strong liability laws if there are any environmental hazards or if something goes wrong in future
- Agriculture is a state subject therefore, it is important for the Centre to take into consideration the views of State Governments as well.
- The Food and Agriculture Organization (FAO) has rightly pointed out in 2004, "Science cannot declare any technology completely risk free. Genetically engineered crops can reduce some environmental risks associated with conventional agriculture, but will also introduce new challenges that must be addressed".

Q) Write a short note on integrated pest management (IPM) also discuss the constraints involved in the same. (250 words)

Reference

Why this question:

The question is straightforward on the concept of IPM.

Key demand of the question:

The answer must discuss in detail the IPM system and the hurdles/challenges involved in practicing it.

Directive:

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:

Begin with brief introduction on the concept of IPM.

Body:

Discussion should include the following:



What is integrated pest management system? – IPM is a managed pest management system that: eliminates or mitigates economic and health damage caused by pests; minimizes the use of pesticides and the risk to human health and the environment associated with pesticide applications.

What are some methods used in IPM? – methods used in IPM include one or a combination of the following: Cultural control (crop rotation, use of locally adapted or pest resistant/tolerant varieties, sanitation, manipulating planting/harvest dates to avoid pests)

Provide for examples.

Discuss specific challenges involved.

Conclusion:

Conclude with way forward.

Introduction:

- Integrated Pest Management (IPM) is an eco-friendly approach which aims at keeping pest population at below economic threshold levels by employing all available alternate pest control methods and techniques such as cultural, mechanical and biological with emphasis on use of bio-pesticides and pesticides of plant origin like Neem formulations.
- The use of chemical pesticides is advised as a measure of last resort when pest population in the crop crosses economic threshold levels (ETL). IPM is aimed at suppression of pest population below economic threshold level through the adoption of feasible and affordable Good Agricultural Practices and causing least disturbance to the eco system and environment.

Body:

- As per United Nation's **Food' and Agriculture Organization (FAO)**, IPM is defined as: "The careful consideration of all available pest control technique's and subsequent integration of appropriate measures that discourage the development of pest populations and keep pesticides and other interventions to levels that are economically justified and reduce or minimize risks to human health and the environment.
- IPM emphasizes the growth of a healthy crop with the' least possible disruption to agro-ecosystems and encourages natural pest control mechanism".

Constraints involved in IPM:

- More involvement in the technicalities of the method
 - Individual farmers and all those involved in IPM have to be educated about their options in the various methods available, which often take time.
- Time and energy consuming
 - Application of IPM takes time and has to be closely monitored, as the practice of IPM has many different methods integrated in order to provide the most effective pest control methods.
- Different pests have different control methods, and it is necessary to monitor which methods are the best for specific pests.
- Initially complicated decision-making.
- Crop monitoring results that can be difficult to interpret.
- Lack of market rewards for IPM grown product.
- Limited market tolerance to blemishes

ICAR-National Research Centre for Integrated Pest Management (NCIPM), India was established in February, 1988 to cater to the plant protection needs of different agro-ecological zones of the country.

Conclusion:

- The increasing cost of plant protection and accelerating pest incidents make agriculture a risky and less profitable enterprise. At the same time the toxic materials generated from chemical farming pollute the environment and harm consumers' and farmers' health.
- Additionally, from the viewpoint of sustainability, attaining growth while maintaining the natural capital intact, IPM is superior compared to conventional farming. It should, therefore be appreciated and encouraged to a greater extent both by governments and NGOs'.

Extra information: Case Study: integrated pest management in Cotton at Ashta village, Nanded district (Marathwada region), Maharashtra.

The general impacts of the Ashta IPM are as below:

- Conservation and enhancement in the activity of the natural enemies (predators and parasites)
- Reduction in the quantity of chemical insecticides used
- Environmental safety as evident by increase in the number of bird population in the crop.
- Compensatory yields and higher net returns



Q) Discuss the major important cropping patterns of India along with the factors affecting it. (250 words)

Indian geography by Majid Hussain

Why this question:

The question is from the static portions of GS paper III.

Key demand of the question:

The answer must discuss mainly the factors affecting important cropping patterns and the key cropping patterns practiced in the country.

Directive:

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:

Describe what is a cropping pattern.

Body:

The answer is straightforward and direct in approach, one has to discuss the major cropping patterns of the country. Cropping Pattern mean the proportion of area under different crops at a point of time, changes in this distribution overtime and factors determining these changes. Cropping pattern in India is determined mainly by rainfall, climate, temperature and soil type. Then explain in detail the factors affecting it – natural and man-made.

Conclusion:

Conclude with significance.

Introduction:

- Cropping pattern is a dynamic concept because it changes over space and time. It can be defined as the proportion of area under various crops at a point of time.
- In other words, it is a yearly sequence and spatial arrangement of sowing and fallow on a given area. In India, the cropping pattern determined by rainfall, climate, temperature, soil type and technology.

Body:

Major important cropping patterns of India:

- **Rabi crops** are sown in winter from October to December and harvested in summer from April to June. Some of the important Rabi crops are wheat, barley, peas, gram and mustard. Though, these crops are grown in large parts of India, states from the north and north-western parts such as Punjab, Haryana, Himachal Pradesh, Jammu and Kashmir, Uttarakhand and Uttar Pradesh are important for the production of wheat and other rabi crops. Availability of precipitation during winter months due to the western temperate cyclones helps in the success of these crops. However, the success of the green revolution in Punjab, Haryana, western Uttar Pradesh and parts of Rajasthan has also been an important factor in the growth of the above-mentioned rabi crops.
- **Kharif crops** are grown with the onset of monsoon in different parts of the country and these are harvested in September-October. Important crops grown during this season are paddy, maize, jowar, bajra, tur (arhar), moong, urad, cotton, jute, groundnut and soyabean. Some of the most important rice-growing regions are Assam, West Bengal, coastal regions of Odisha, Andhra Pradesh, Telangana, Tamil Nadu, Kerala and Maharashtra, particularly the (Konkan coast) along with Uttar Pradesh and Bihar. Recently, paddy has also become an important crop of Punjab and Haryana. In states like Assam, West Bengal and Odisha, three crops of paddy are grown in a year. These are Aus, Aman and Boro.
- In between the Rabi and the kharif seasons, there is a short season during the summer months known as the **Zaid season**. Some of the crops produced during 'zaid' are watermelon, muskmelon, cucumber, vegetables and fodder crops. Sugarcane takes almost a year to grow.

Some of the most commonly followed crop patterns:

- **Rice-Wheat:** UP, Punjab, Haryana, Bihar, West Bengal, Madhya Pradesh.
- **Rice-Rice:** Irrigated and Humid coastal system of Orissa, Tamil Nadu, Andhra Pradesh, Karnataka and Kerala.
- **Rice- Groundnut:** Tamil Nadu, Andhra Pradesh, Karnataka, Orissa and Maharashtra
- **Rice-Pulses:** Chhattisgarh, Orissa and Bihar.
- **Maize-Wheat:** UP, Rajasthan, MP and Bihar.



- **Sugarcane-Wheat:** UP, Punjab and Haryana accounts for 68% of the area under sugarcane. The other states which cover the crops are; Karnataka and MP.
- **Cotton-Wheat:** Punjab, Haryana, West UP, Andhra Pradesh, Karnataka, Tamil Nadu.
- **Soya bean-Wheat:** Maharashtra, MP and Rajasthan
- **Legume Based Cropping Systems (Pulses-Oilseeds):** MP, Gujarat, Maharashtra, Andhra Pradesh and Karnataka.

Factors affecting Cropping pattern: Cropping pattern of any region depends upon many factors

- **Physical and Technical Factors:**
 - These include the physical characteristic as soil, climate, weather rainfall etc. In the dry regions where the rainfall is scanty and where there is high uncertainty of monsoons, the dependence is on jowar and bajra. Water logging areas cultivate rice.
 - Cropping pattern also depend upon irrigation facilities. Where ever water is available, not only can a different crop be grown but even double or triple cropping will be possible.
- **Economic Factors:**
 - Economic motivation is the most important in determining the cropping pattern of the country. Among the various economic factors affecting crop pattern, the following are important:
 - **Price and Income Maximisation:** Price variations exert an important influence on acreage shifts. The variation in the inter-crop prices led to shifts in acreage as between the crops.
 - **Farm Size:** There is a relationship between the farm size and the cropping pattern. The small farmers are first interested in producing food grain for their requirements. Small holder therefore devotes relatively small acreage to cash crops than large holders.
 - **Insurance against risk:** The need to minimise the risk of crop failures not only explains diversification but also some specific features of crop patterns.
 - **Availability of Inputs:** Seeds, fertilizers, water storage, marketing, transport etc. also affect the cropping pattern.
 - **Tenure:** Under the crop sharing system, the landlord has a dominant voice in the choice of the cropping pattern and this helps in the adoption of income maximising crop adjustments.
- **Infrastructure facilities:**
 - Irrigation, transport, storage, trade and marketing, post-harvest handling and processing etc
- **Government Policies:**
 - The legislative and administrative policies of the government may also affect the cropping pattern. Food Crops Acts, Land Use Acts, intensive schemes for paddy, for cotton and oilseeds, subsidies affect the cropping pattern.
 - MSP – farmers shifting to wheat, rice
 - Green Revolution – skewed cropping pattern in Northern India towards wheat and rice from coarse cereals and pulses
- **Social factors**
 - Food habits also play a role – East and South India prefers rice as staple food while it is wheat in North India.

Conclusion:

- The cropping pattern in India has undergone significant changes over time. As the cultivated area remains more or less constant, the increased demand for food because of increase in population and urbanisation puts agricultural land under stress resulting in crop intensification and substitution of food crops with commercial crops.

Q) Discuss the role of IT in Agriculture and also explain what are the major challenges in the spread of e-technology to farmers. (250 words)

Reference

Why this question:

The question is from the static portions of GS paper III.

Key demand of the question:

The answer must discuss the role played by IT in augmenting the agriculture system and as well explain the challenges faced in the spread of e-technology to farmers.

**Directive:**

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:**

Begin with brief introduction by explaining the need for e-technology to farmers.

Body:

Discussion should include the following:

Role of IT in agriculture; as a tool for direct Agri productivity and as an indirect tool for empowering farmers.

Major challenges in the spread of e-technology to farmers – lack of literacy to understand the technology, gaps in infrastructure, reach, mobility and connectivity etc.

Explain in detail the associated hurdles.

Conclusion:

Conclude with way forward.

Introduction:

- Information Technology (IT) has long been viewed as having great potential for improving decision making in agriculture. IT has connected the world globally and is now changing our life style and social consciousness dynamically. In all phases of the agricultural industry, information technologies are vital to the management and success of a business. Agriculture has also been greatly influenced by IT.

Body:**Role of IT in Agriculture:**

In the context of agriculture, the potential of information technology (IT) can be assessed broadly under two heads:

- as a **tool for direct contribution to agricultural productivity**
- As an **indirect tool for empowering farmers to take informed and quality decisions which will have positive impact on the way agriculture and allied activities are conducted.**
- Precision farming, popular in developed countries, extensively uses IT to make direct contribution to agricultural productivity. The techniques of remote sensing using satellite technologies, geographical information systems, agronomy and soil sciences are used to increase the agricultural output. This approach is capital intensive and useful where large tracts of land are involved. Consequently it is more suitable for farming taken up on corporate lines.
- The indirect benefits of IT in empowering Indian farmer are significant and remains to be exploited. The Indian farmer urgently requires timely and reliable sources of information inputs for taking decisions.
- Access to technology is one of the most important enablers for smallholders to improve productivity sustainably. Innovative mechanisms for technology transfer are required to bring relevant tools, knowledge and knowhow to farmers.
- Market linkages are common weak points between the smallholders and formal supply chains. Intermediaries are required not only to aggregate production from small-scale growers, but also to provide support and services to ensure the quality and consistency of production.
- ICT applications can foster dissemination of information on technology, market demand and price information; weather, pest, and risk-management information, best practices to meet quality and certification standards.
- To bridge the information gap between the farmers and to build productive and competitive market, different ICT interventions support rural and under-developed markets to become efficient and productive.
- The rapid changes in the field of information technology make it possible to develop and disseminate required electronic services to rural India. The existing bottlenecks in undertaking the tasks need to be addressed immediately.

Challenges in spread of e-technology to farmers:**Mobile Connectivity:**

- Even the masses have access to mobile connectivity, but the potential of the handsets are not yet tapped. This is largely because of the content delivered is often not directly related to their livelihood and environment. Since they need localised news and information directly delivered in their language to meet their daily needs.
- Affordability is a key issue for many potential users. Not everyone can afford handsets; innovative business models adopted by the firms and handsets at low price tag which work for voice and sms based services.



- Other challenge in disseminating agriculture related information is dynamic nature of information. Farming is not so linear but requires constant inputs at every stage where new technological inputs provide better crop outputs.

Internet Connectivity:

- **Haphazard development:**
 - It is observed that some initiatives have already been made to provide IT based services to farmers. However, duplication of efforts are witnessed as most of the services revolve around limited subjects.
 - Keeping in view the giant task involved, it is necessary to form a coordination mechanism to strive for a concerted effort to support farming community in the country. Such a coordination agency may only have advisory powers.
- **User friendliness:**
 - The success of the strategy depends on the ease with which rural population can use the content.
 - This will require easy language, training to farmers and intuitive graphics based presentation.
- **Local languages:**
 - Regional language fonts and mechanisms for synchronisation of the content provides a challenge that needs to be met with careful planning
- **Restrictions:**
 - Information content based on remote sensing and geographical information systems can provide timely alerts to the farmers and also improve the efficiency of administration.
- **Power Supply:**
 - In most of the rural India, power supply is not available for long hours. This will reduce the usefulness of the intended services.
 - Since almost entire country receives sunshine for most part of the year, it is useful to explore solar power packs for UPS as well as for supply of power.
- **Connectivity:**
 - Despite the phenomenal progress made in the recent years, the connectivity to rural areas still requires to be improved.
 - Reliable connectivity is a prerequisite for a successful penetration of IT into rural areas.

Conclusion:

- The use of IT in agriculture has grown rapidly in the past few years. It is increasingly being used to help managers make better decisions.
- However, IT and the problem facing decision makers are constantly changing. Thus, future information systems for research purposes will be significantly different than current systems because of these changes. IT has been one of the most aspired fields in today's world. Integrating IT with agriculture will help any country to regulate its overall economy and trade.

Topic: Agriculture issues; 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) In India, a large part of the Agri supply chain ecosystem is either in the public sector, or strongly linked to it, do you think private investments in primary agriculture can prove to be a solution to make agriculture more sustainable for the country? Discuss. (250 words)

Reference

Why this question:

The article debates about the role of private investments in agriculture and the possible consequences of it.

Key demand of the question:

The answer must provide for a detailed analysis of possible impact that private investments would have on agriculture in India.

Directive:

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:

Begin with brief background of the context in question.

Body:

Discussion should include the following:

First discuss the gaps in agriculture system of the country – infrastructural gaps, financial gaps, role of government etc.

Then move on to explain what effect would private investment have on India.

Discuss what can be the issues associated to increased private investments.

Link it to doubling of farmer's income and end with a positive note.

Conclusion:

Conclude with way forward.

Introduction:

- In India, a large part of the agri supply chain ecosystem is either in the public sector, or strongly linked to it. The huge scale at which it is done has many chinks in the armour. This has resulted in food quality issues, huge wastage of food, reduced remuneration to farmers and agrarian distress.

Body:

Role of Government:

- The Indian government attempts to insulate the cultivator from price fluctuations by procuring their produce at Minimum Support Prices (MSPs).
- The 7500+ Agricultural Procurement and Marketing Committee (APMC) mandis provide a marketplace for the transaction and the Food Corporation of India (FCI) plays the role of the buyer, storing the procured produce in the relevant warehousing corporation's warehouse.
- Ultimately, this gets distributed through the Public Distribution System (PDS) shops and reaches the consumer. For non-MSP crops, the producer is dependent on the traditional private channels to market her produce.
- Agriculture is a 'state subject' and a large part of investment as well as regulatory progress is happening at the state level.
- Till very recently, regulatory barriers had constrained the development of storage and processing infrastructure but measures like inclusion of agri-warehousing under priority sector lending by RBI, subsidy schemes, tax incentives and the Warehousing Act (which will promote negotiability of warehousing receipts) have helped private players take an active interest in the same.
- The Private Entrepreneur Guarantee Scheme is one such initiative to incentivize private investment for construction of warehouses by private entrepreneurs, with an FCI guarantee to hire them for 10 years, assuring a fair return on investment by the entrepreneur.

Challenges posed due to monopoly of Public sector:

- **Inefficient price signals:** The government has been buying almost one-third of all rice and wheat produced in India through the PDS system, but in other kinds of grains, fruits and vegetables (both being highly perishable), the role of the government is limited. This leads to MSPs being ineffective as both price signals and as insulators from the perspective of the larger agricultural population.
- **Limited reach of mandis:** Also, this procurement system has failed to cover the entire country evenly (back of the envelope calculation suggests that on an average, a farmer needs to travel 12 kms to reach the nearest mandi and more than 50 kms in NE India) while according to the recommendations by National Farmers Commission, availability of markets should be within a 5 km radius.
- **Too many intermediaries, information asymmetry:** The above mentioned problems have led to formation of long marketing channels, with multiple intermediaries, adding to the woes of the producers of perishable agri goods. These intermediaries have led to a cost inflation of ~250% (over the cost of production) and have exacerbated the existing information asymmetries in agriculture, especially for non-MSP crops.
- **Inadequate infrastructure for storage:** The Planning Commission has recently estimated the gap between agri-warehousing supply and demand at 35 mn MT. Currently, public sector agencies like the FCI, Central Warehousing Corporations (CWC) and the various State Warehousing Corporations (SWC) have a storage capacity of 71 mn MT, while the private sector has close to 25 mn MT. To put the scarcity in perspective, food grain stocks held only by the government was 80 mn MT last year (peak) according to the FCI annual report.
- **Skewed distribution of capacity:** Skewed distribution of this capacity is another issue, with North India having access to 60% of the total storage infrastructure. The Planning Commission has recently estimated the gap between agri-warehousing supply and demand at 35 mn MT.



- **Lack of cold storage infrastructure:** India's current cold storage capacity at 25 MT is barely sufficient for 10% of fruit and vegetables produced in the country.
- **Lack of collateral management options:** Collateral management refers to financing of agricultural goods stored at warehouses, and is estimated to be a ~Rs 3,500 cr opportunity by industry sources.

Private investments potential to improve the situation:

- **Comprehensive agriculture logistics solutions:** Private players that provide integrated post harvest management solutions have entered the space to fill these gaps. They could also provide collateral management and other value added services (quality testing, agri insurance, bulk procurement and rural retailing) to its clients.
- **Integrated cold chain solutions:** They could provide customized solutions for cold storage and refrigerated transportation across India for fresh and frozen commodities.
- **Contract Farming:** involved in contract farming and agro processing, working on improving income realizations for small farmers through yield improvements, productivity increases, and consistent produce pricing.
- **Alternate marketplaces:** By providing a way to bypass the long chain of intermediaries by directly connecting buyers and sellers of agricultural produce and allied services, via a web and mobile based information exchange platform.
- **Reducing the information asymmetry:** Riding on the high mobile penetration in rural India private players are working on the problem of information asymmetry for agricultural producers, by making personalized agricultural market information available to the farmers at minimal costs, through a mobile based service.
- **Innovative ICT tools for supply chain management:** A hosted web service for supply chain management, which can be accessed via basic mobile phones and web browsers, which makes it uniquely suitable for in rural markets. It is a configurable service which offers customers the ability to capture and share data in a simple, low-cost way, empowering them to make better logistics decisions.

Conclusion:

- These solutions could lead to better supply chain management in Indian agriculture, reducing inefficiencies and increasing farmer realizations, as well as curbing food waste. A co-ordinated effort with good policies bolstered by logistics of the private players can help in achieving the goal of doubling farmer's income by 2022.

Q) To tackle agrarian distress in a sustainable manner, direct income support to farmers needs to be complemented with reforms in Agriculture marketing and trade policies. Explain. (250 words)

Reference

Why this question:

The question is straightforward and must discuss the approach for sustainable agriculture and suggest solutions for tackling agrarian distress.

Key demand of the question:

The answer must discuss the role of Agri markets, physical infrastructure that needs to be supported along with direct income support to make agrarian distress

Directive:

Explain – Clarify the topic by giving a detailed account as to how and why it occurred, or what is the particular context. You must be defining key terms where ever appropriate, and substantiate with relevant associated facts.

Structure of the answer:

Introduction:

Describe the conditions of agrarian distress.

Body:

The answer must emphasize on the methods of handling agrarian distress in a sustainable manner, one has to elaborate how income transfer alone can not be a fixed one-shot solution to the problems facing agriculture.

Conclusion:

Conclude with importance of having multi-pronged approach to address the distress.

Introduction:

- The **lack of remunerative prices** for the crops is one of the main reasons for Agrarian distress in India today. The various options like **Minimum Support Price** for about 25 crops, **Farm Loan Waiver** schemes undertaken by various state governments have failed to alleviate the problem.



- The NSSO Situation Assessment Survey of Agricultural Households (2013) shows that 52% of farming households are indebted, with rates as high as 89-92% in some States.

Body:

Direct Cash/Intervention Scheme: This involves the **Direct Benefit Transfer (DBT) of the cash to the farmers.**

- It can be enforced to include almost all the farmers who have access to formal banking channels (Jan-Dhan Accounts).
- Provides financial help at proper time/ season and would also **spur the investment cycle in the farm economy.**
- Helps large as well as small farmers and can even be capped to limit unwarrantedly huge transfers to rich farmers.
- The corruption issue can be eliminated as farmers directly get the cash in their accounts.

Examples of Direct Intervention Schemes:

- **Pradhan Mantri Kisan Samman Nidhi** will provide assured income to small and marginal farmers. The amount will be transferred directly into their account in 3 equal instalments. With this decision, all land holding eligible farmer families (subject to the prevalent exclusion criteria) would avail of the benefits under this scheme. It would not only provide assured supplemental income to the most vulnerable farmer families, but would also meet their emergent needs especially before the harvest season.
- The Telangana government's income/investment support through the **Rythu Bandhu Scheme (RBS)**. Telangana started RBS in May 2018, whereby it gave Rs 4,000 per acre to every farmer. This transfer is made twice a year, coinciding with the two cropping seasons. By directly giving cash, the government aims to support the input purchases of farmers. The scheme is said to have reached almost 93 per cent of landowners.
- **Odisha** has launched the **KALIA scheme** that will provide Rs. 10,000 to about 3 million small and marginal farmers for the Rabi and kharif crops.
- **Jharkhand** has announced a Rs. 5,000-per-acre payment to 2.3 m medium and marginal farmers from the next financial year.
- **West Bengal** has announced two new schemes for farmers and farm labourers in the state that entail a payment of Rs.5,000 per acre every year in two instalments besides Rs.2 lakh to the kin of farmers who die due to any reason, including suicide.

However, the other problems like Rigid Market Structure, Middlemen issues, Poor infrastructure and logistics, Information Asymmetry, Government Policies also reveal that the Agricultural Marketing has remained a weak point. This has resulted in poor incomes to farmers despite good produce, gluts in the market leading to price crashes, high amount of food rotting and wastage.

Therefore, there is a need to improve the agricultural marketing too by taking up following measures:

- It is imperative to bring agriculture marketing into the Concurrent or Union list to benefit farmers. This will guarantee remunerative prices to farmers.
- The Committee on Doubling Farmers' Income under the chairmanship of Ashok Dalwai justifies the recommendation saying marketing has no boundaries; this **necessitates a pan-India operation** to meet the demand across the country.
- NITI Aayog's **model Agricultural Produce and Livestock Marketing Act** should be implemented by the states. Further the provisions like facilitating single-point levy of taxes, promoting direct interface between farmers and end-users, and give freedom to farmers to sell their produce to whomsoever and wherever they get better prices.
- e-NAM is a good step in this way. Budget 2018 announced developed **GRAMS** which would be integrated to the e-NAM Structure.
- Promoting warehouse receipts, agro-processing and exports. Warehouse receipts will help farmers defer their sale immediately post harvest, when prices are at their lowest level.
- This will require a consolidation of farm produce, which can be successfully done through farmer-producer organisations.
- Agro-processing and trade will require investment in developing infrastructure.
- Existing agri-export zones need to be revisited and strengthened in this changing scenario.
- States alone cannot revamp the agricultural marketing sector, primarily due to paucity of funds and technology.
- Private investment on a massive scale needs to be invited to upgrade and build large storage and warehousing systems that are climate resilient.

**Conclusion:**

- The agrarian distress is a result of combination of factors. Thus, the need of the hour is a multi-pronged approach tackling the structural issues. It is time to concede that **production and marketing** should march together in order to benefit farmers and consumers. A co-ordinated effort with good policies bolstered by logistics of the private players can help in achieving the goal of doubling farmer's income by 2022.

Q) Agrarian distress is majorly a result of low farm prices and low agricultural productivity. Suggest measures which could help in realizing the goal of doubling farmers' incomes by 2022. (250 words)

Reference**Why this question:**

The question is straightforward and is about discussing extent of agriculture distress.

Key demand of the question:

The answer must discuss the key factors causing the Agrarian distress, and about the demands of urgent policy attention.

Structure of the answer:**Introduction:**

In a few introductory lines discuss the current Agrarian distress facing India.

Body:

In brief discuss –

- The rising demand for farm loan waivers across states show the extent of agriculture distress.
- This agrarian distress demands urgent policy attention on the following lines:
 - raise productivity
 - reduce costs of cultivation by providing quality inputs at subsidised rates
 - provide remunerative prices following the recommendations of the Swaminathan Commission
 - ensure assured procurement of output
 - expand access to institutional credit
 - enhance public investment for infrastructural development
 - institute effective crop insurance systems
 - establish affordable scientific storage facilities and agro-processing industries for value addition etc.
- Suggest what should be the way forward.

Conclusion:

Conclude with what more needs to be done.

Introduction:

- Agrarian distress, in the present context, is mainly in terms of low agricultural prices and, consequently, poor farm incomes. Low productivity in agriculture and related supply side factors are equally important.
- An issue that is connected is the declining average size of farm holdings and the viability of this size for raising farm incomes.

Body:**The critical issues associated with Agricultural Marketing:**

- **Rigid Market Structure:**
 - Prevalence of APMC markets, trader cartels due to which low price for agri produce is offered specially due to bumper crop production.
- **Poor Infrastructure and Logistics:**
 - Lack of diffusion of adequate storage facilities lead to wastage. For instance farmers dump truckloads of vegetables on road.
 - **Food Parks projects** concentrated near to cities and poor maintenance leads to spoilage of the crops.
 - Cold storage units exist in less than one-tenth of the markets and grading facilities in less than one-third; electronic weigh-bridges are available only in a few markets.
- **Government Policies:**
 - 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.



- **Pro-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.
- **Middlemen troubles:**
 - As pointed out by Ramesh Chand, in Punjab, there are as many as 22,000 commission agents and innumerable middlemen in each market.
 - According to Ashok Gulati, former chairman of the Commission for Agricultural Costs and Prices, commission agents in Delhi charge exorbitant fees ranging from 6 per cent to 15 per cent.
- **Information Asymmetry:**
 - A bumper crop can pull down prices in wholesale markets. Price spikes after a poor crop are inevitably dealt with through cheap imports in a bid to protect consumers. The opposite is done less frequently. This is due to lack of information.
 - The bountiful rains of 2016 resulted in record farm output. Prices crashed. Farmers are reported to have not been able to even recover the cost for some crops.
 - The prospects of a good monsoon pushed up rural wages. The reality of rock bottom prices then destroyed profit margins.
- **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. Example: Tomato, Toor Dal etc.
- **Farmers income remained low:**
 - India had record food production in 2017-18, but farmers' income remained low and stagnant.
 - According to Ashok Dalwai committee, farmer's income remained about 15-40% of consumer's price.
 - Studies conducted by the International Food Policy Research Institute and World Bank have confirmed this.

Government has set up many committees like **Swaminathan committee** and the recent **Ashok Dalwai committee** to give solutions to agrarian distress in India. The **measures that can help agrarian distress in the country are as follows:**

- **Credit, finance and Insurance:**
 - Raising the MSP, price deficiency payments or income support schemes can only be a partial solution to the problem of providing remunerative returns to farmers.
 - A **functional institutional credit system** which is accessible and accountable to all cultivators.
 - This covers not only land-owning farmers but also sharecroppers, tenants, adivasi and women farmers, and animal-rearers.
 - Credit products for agriculture need to be tailor-made based on cropping and rain cycle, specific to a particular region. The regional offices of commercial banks should contribute in this exercise. Registration of all cultivators and providing Kisan credit cards.
 - The period of crop loan should be extendable to four years, given that, on average, every second or third year the spatial distribution of rain pattern is erratic in India.
- **Land holdings:**
 - The average size of farm holdings **declined from 2.3 hectares in 1970-71 to 1.08 hectares in 2015-16**.
 - Policies for land consolidation along with land development activities in order to tackle the challenge of the low average size of holdings.
 - Farmers can **voluntarily come together** and pool land to gain the benefits of size. Through consolidation, farmers can reap the economies of scale both in input procurement and output marketing.
- **Input Costs:**
 - It is more important to make agriculture sustainable by reducing input costs of seeds, fertilizers and other inputs.
 - Investment in infrastructure and research and development are needed.
 - There is a need for collaboration of **industry-academia** for coming out with cost-effective solutions to agrarian distress.
 - There is a need to make a shift from rice and wheat-centric policies to millets, pulses, fruits, vegetables, livestock and fish.



- **Remunerative Prices:**
 - Extending reach of minimum support price which has been dedicated to few crops and in a narrow geographical area is important.
 - Set up of Futures and Trade markets, tie up of farmer and private companies for procurement should be looked into as alternative methods against distress sale.
- **Agro- Produce Marketing and Processing:**
 - The creation of a **competitive, stable and unified national market** is needed for farmers to get better prices.
 - For better price for farmers, agriculture has to go beyond farming and **develop a value chain comprising farming, wholesaling, warehousing, logistics, processing and retailing.**
 - The agro-processing industry and warehousing needs to expand so that agricultural produce can be stored when prices plunge.
 - Promoting viable farmer collectives to act as a “collective voice of marginal and small farmers”.
 - Legislations on the basis of NITI Aayog’s new model law — **Agricultural Produce and Livestock Marketing (Promotion and Facilitating) Act (APLM)** should be enacted in all states.
 - A sustainable solution is market reforms to enable better price discovery combined with long-term trade policies favourable to exports.
- **Technology:**
 - Use water-use efficient technologies that can improve significantly the produce like drip irrigation and sprinkler irrigation.
 - Precision agriculture, GM Crops should be encouraged drought prone areas.
 - Space technology and Mobiles should act as “Eyes and Ears” of the farmers to assist in farming.
- **Distress Management:**
 - Establish farmers’ distress and disaster relief commissions at the national and State levels, based on the model of **Kerala Farmers’ Debt Relief Commission.**

Conclusion:

- Farmers’ distress is due to low prices and low productivity. **Limited procurement, measures to improve low productivity, and consolidation of land holdings to gain the benefits of size, can help in reducing agrarian distress.** It is time to concede that **production and marketing** should march together in order to benefit farmers and consumers. Farmers need to be empowered to decide when, where, to whom and at what price to sell.

Q) What are the major reforms needed in Food Corporation of India to ensure food security in India? Do you think the recommendations of the Shanta Kumar Committee take us in that direction? (250 words)

[pib](#)

Why this question:

Union Minister of Consumer Affairs, Food and Public Distribution laid down the future roadmap for Food Corporation of India (FCI) recently, thus it is essential for us to analyse the major reforms needed in Food Corporation of India to ensure food security in India.

Key demand of the question:

The answer must analyse the major reforms needed in Food Corporation of India to ensure food security in India along with significance of Shanta Kumar committee.

Structure of the answer:

Introduction:

In a few lines state some the role played by FCI.

Body:

The answer must discuss the following:

Discuss the Key highlights of the roadmap:

- Primacy will be given to ensuring that the functioning of FCI is streamlined and fast paced as per recommendations of the Shanta Kumar Committee.
- 100 lakh ton silo storage capacity will be created in the country. For this, RITES has been assigned the task of changing the silo model and they will give their recommendations in 90 days to FCI.
- At present, there are 3 types of labourers in FCI namely Departmental, Daily Payment System (DPS) and No work no pay workers along with contractual labour. Government of India is



deliberating to finish the 3 different arrangements and bring all workers of FCI under a single, uniform system which will bring stability of tenure and secured wages for all.

- To improve the usage of Information Technology in FCI, a Human Resource Management System (HRMS) will be implemented, the work for which will begin in August, 2019 and will be completed by August 2020. This move will benefit 22,000 employees in 196 offices of FCI. Then move on to explaining the significance of recommendations made by Shanta Kumar committee.

Conclusion:

Conclude with way forward.

Introduction:

- Food Corporation of India (FCI) was formed in 1960's and was part of larger plan directed toward food security and self-sufficiency. Other major institution was CACP. These two institutions along with MSP regime and Public distribution system were expected to work in tandem. FCI's responsibility was to procure, Store and discharge grains as per policy of the government.
- Over the time, as in other cases these institutions too failed to adapt to changing circumstances such as changing demands of economy. As a result FCI now reels under chronic inefficiency through huge wastages, and storage cost of grains keeps on cumulating.

Body:

Reforms needed in FCI due to:

- **Issues with procurement:**
 - Open-ended Procurement: All incoming grains accepted even if buffer stock is filled creating a shortage in the open market.
 - The recent implementation of Nation food security act would only increase the quantum of procurement resulting in higher prices for grains.
 - The gap between required and existing storage capacity.
- **Issues with storage:**
 - Inadequate storage capacity with FCI.
 - Food grains rotting or damaging on the CAP or Cover & Plinth storage.
- **Issues with allocation of food grains:**
 - Inaccurate identification of beneficiaries.
 - Illicit Fair Price shops: The shop owners have created a large number of bogus cards or ghost cards(cards for nonexistent people) to sell food grains in the open market.
- **Issues with transportation:**
- Leakages in food grains distribution to be reduced as most leakages in PDS takes place in initial stages.

The government had set up a **six-member committee under Shanta Kumar** to suggest restructuring or unbundling of FCI to improve its financial management and operational efficiency in procurement, storage and distribution of food grains.

Important recommendations made:

- Reduce the number of beneficiaries under the Food Security Act—from the current 67 per cent to 40 per cent.
- Allow private players to procure and store food grains.
- Stop bonuses on minimum support price (MSP) paid by states to farmers, and adopt cash transfer system so that MSP and food subsidy amounts can be directly transferred to the accounts of farmers and food security beneficiaries.
- FCI should involve itself in full-fledged grains procurement only in those states which are poor in procurement. In the case of those states which are performing well, like Haryana, Punjab, Andhra Pradesh, Chhattisgarh, Madhya Pradesh and Odisha, the states should do the procurement.
- Abolishing levy rice: Under levy rice policy, government buys certain percentage of rice (varies from 25 to 75 per cent in states) from the mills compulsorily, which is called levy rice. Mills are allowed to sell only the remainder in the open market.
- Deregulate fertiliser sector and provide cash fertiliser subsidy of Rs 7,000 per hectare to farmers.
- Outsource of stocking of grains: The committee calls for setting up of negotiable warehouse receipt (NWR) system. In the new system, farmers can deposit their produce in these registered warehouses and get 80 per cent of the advance from bank against their produce on the basis of MSP.



- Clear and transparent liquidation policy for buffer stock: FCI should be given greater flexibility in doing business; it should offload surplus stock in open market or export, as per need.

Government has taken up few of the reforms as follows:

- **Aadhaar Linked and digitized ration cards:** This allows online entry and verification of beneficiary data. It also enables online tracking of monthly entitlements and off-take of foodgrains by beneficiaries.
- **Computerized Fair Price Shops:** FPS automated by installing 'Point of Sale' device to swap the ration card. It authenticates the beneficiaries and records the quantity of subsidized grains given to a family.
- **Direct Benefit Transfer:** Under the Direct Benefit Transfer scheme, cash is transferred to the beneficiaries' account in lieu of foodgrains subsidy component. They will be free to buy food grains from anywhere in the market. For taking up this model, pre-requisites for the States/UTs would be to complete digitization of beneficiary data and seed Aadhaar and bank account details of beneficiaries. It is estimated that cash transfers alone could save the exchequer Rs.30,000 crore every year.
- **Use of GPS technology:** Use of Global Positioning System (GPS) technology to track the movement of trucks carrying food grains from state depots to FPS which can help to prevent diversion.
- **SMS-based monitoring:** Allows monitoring by citizens so they can register their mobile numbers and send/receive SMS alerts during dispatch and arrival of TPDS commodities
- **Use of web-based citizens' portal:** Public Grievance Redressal Machineries, such as a toll-free number for call centers to register complaints or suggestions.

Government has come up with a **roadmap** with the following highlights:

- Primacy will be given to ensuring that the functioning of FCI is streamlined and fast paced as per recommendations of the Shanta Kumar Committee.
- 100 lakh ton silo storage capacity will be created in the country. For this, RITES has been assigned the task of changing the silo model and they will give their recommendations in 90 days to FCI.
- At present, there are 3 types of labourers in FCI namely Departmental, Daily Payment System (DPS) and No work no pay workers along with contractual labour. Government of India is deliberating to finish the 3 different arrangements and bring all workers of FCI under a single, uniform system which will bring stability of tenure and secured wages for all.
- To improve the usage of Information Technology in FCI, a Human Resource Management System (HRMS) will be implemented, the work for which will begin in August, 2019 and will be completed by August 2020. This move will benefit 22,000 employees in 196 offices of FCI.

Conclusion:

- The Committee recommendations however was criticized due to suggestions like limiting NFSA, cash subsidy, privatization of FCI despite suggesting useful reforms to reform FCI, PDS. A closer scrutiny in the recommendation is needed today in times of agricultural distress & drought prone years.

Q) What do you understand by agricultural development? Discuss the role played by NGOs in supporting farmers across the states for agricultural development. (250 words)

[The hindubusinessline](http://www.insightsonindia.com)

Why this question:

The article discusses a specific case study of How an NGO named AHIMSA has been supporting farmer-producer groups across States

Key demand of the question:

The answer must first discuss the concept of agricultural development and analyse the role played by NGOs in agricultural development of the country.

Directive:

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:

In a few lines define the concept of agricultural development.

Body:

The answer must discuss the following:

- What do you understand by agricultural development?



- What way can civil societies catalyze agriculture development in India?
- Discuss the prevalent issues and challenges facing Indian agriculture.
- One can discuss a case study (say the case study of NGO AHIMSA) and explain how along with efforts of the government on the policy front, such multi stakeholders' approach is crucial to the development of agrarian scenario of the country.

Conclusion:

Conclude with way forward.

Introduction:

- Agriculture development means providing assistance to the crop producers with the help of various agricultural resources. Providing protection, assisting in the research sphere, employing latest techniques, controlling pests and facilitating diversity all fall within the purview of agriculture development.

Body:

Agriculture development includes the following:

- **Irrigation Facilities:** Crop productivity depends not only on the quality of input but also on the irrigation facilities. Therefore, canals, tube wells should be constructed to provide better irrigation facilities for the security of crops. Extensive flood control measures should be adopted to prevent the devastation caused by floods.
- **Institutional Credit:** To save the farmers from the clutches of moneylenders, adequate credit facilities should be made available at reasonable cheap rates in rural areas.
- **Proper Marketing Facilities:** Marketing infrastructure should be widened and strengthened to help the farmers to sell their products at better prices. There should be proper arrangements for unloading of the produce in the markets.
- **Supply of Quality Inputs:** The farmer in the country should be supplied with quality inputs at proper times and at controlled prices. To protect the farmers' exploitation, effective steps are needed to be taken to check the sale of adulterated fertilizers.
- **Transport Facilities:** To facilitate the farmers to produce new farm inputs and enable them to sell their product in markets, villages should be linked with mandies. It would help to raise their income which in turn stimulates the farmer's interest to adopt better farm technology with sufficient income.
- **Agricultural Education:** In a bid to guide and advise the farmers regarding the adoption of new technology arrangements should be made for agricultural education and extension services. It would assist the farmers to take proper crop-care leading to increase in crop productivity.
- **Land Reforms:** It is also suggested that efforts should be made to plug the loopholes in the existing land legislations so that the surplus land may be distributed among the small and marginal farmers.
- **Development of Cottage and Small Scale Industries:** In rural areas, more emphasis should be made to set up cottage and small scale industries. This will raise the income of the peasants and keep them busy during the off season.
- **Co-operative Farming:** To check the sub-division and fragmentation of holding, the movement of co-operative farming should be launched. Co-operative farming would result in the adoption of modern technology on so-called big farms.

Role of NGOs in agricultural development:

- As economic reform and liberalization saw the Government vacating several areas to let private sector entrepreneurship flourish and contribute to the high growth rate of the economy in recent years, a similar paradigm shift is needed to transform NGOs from their dependence on aid and grants from within and outside for transforming the rural scenario in the country.

This is sought to be achieved for the NGOs through engaging them in micro-finance, micro insurance, and micro-entrepreneurship activities for the overall development of the rural areas and to promote the welfare of the people of rural India. Some of the important roles played by NGO are:

- **Livelihood Enhancement:** Contribute to livelihoods by creatively marketing "value-added" cultivated and wild agricultural biodiversity.
- **Conservation:** Conserve local seed diversity, promote an increased reliance on biodiversity-based ecological agriculture, and use these as foundations for endogenous growth and development of rural communities.
- **Sustainable production:** Connect the natural elements—soil, water, air, sunlight, and seed—to ensure an abundance of nutritious food and other basic community needs.
- **Training farmers:** Enhancing the Ability of Farmers to Perform Task by Providing Ample Knowledge about various tasks.



- Create a gender-sensitive environment that enhances women's leadership skills.
- **Skill development:** Working On Skill Development to Empower Farmers With New Skills
- **Digital marketing of produce:** To help farmers by Showing the Right Channel of Market and Contacting Digitally.
- **Creating awareness:** Taking active role in Creating awareness On Different Government Schemes & Techniques for Helping Farmers
- Continue to nurture community participation and assist in building robust community institutions like SHGs, FPOs, Co-operative societies etc.
- NGOs have also developed innovative dissemination methods, relying on farmer-to-farmer contact, whether on a group or individual basis
- NGOs' rapport with farmers has allowed them to draw on local knowledge systems in the design of technology options and to strengthen such systems by ensuring that the technologies developed are reintegrated into them

A host of NGO's across the globe are involved in the above tasks for agricultural development. In the Indian context, few of the notable NGOs are DHAN, NERD, MYRADA, National Agro Foundation, REPCO Foundation for Micro Credit, SEVA etc.

Some of the major initiatives taken up by the NGOs are Watershed development program, Vermi-composting, Bio-fertilizer production training, Micro-finances, Agricultural Co-operatives, Farm Produce Organizations, Extension services etc.

Conclusion:

- Agriculture development should be such that it brings about a revolution in the agriculture industry to give birth to an agriculture which is profit giving and at the same time eco friendly.

Q) What do understand by peri urban agriculture? In what way can it aid in addressing the effects of climate change? Discuss. (250 words)

Reference

Why this question:

The question is based on the concept of 'Peri-Urban Agriculture'. One has to analyse how it would contribute in mitigating the effects of climate change.

Key demand of the question:

The answer must analyse the concept in detail and discuss its contributions in handling the climate change impact.

Directive:

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:

Describe what is 'Peri-Urban Agriculture'.

Body:

The answer must have the following points of discussions:

Peri-urban agriculture occurs in surrounding the boundaries of cities throughout the world and includes products from crop and livestock agriculture, fisheries and forestry.

It also includes non-wood forest products, as well as ecological services provided by agriculture, fisheries and forestry. Often multiple farming and gardening systems exist in and near a single city.

Green zones around urban areas.

Reduction in phenomenon of Urban heat island.

Lower need for transportation.

Diversification of food basket.

Restrict unplanned urbanization.

Conclusion:

Conclude with urgent need for policy changes like effective legislation, long-term leases, leasing of the plots and gardens through a contract recognized by the municipality and correctly registered to promote participation by potential farmers, vegetable growers and livestock producers

**Introduction:**

- Peri-urban agriculture is defined as agriculture undertaken in places on the fringes of urban areas. It is usually carried out in surrounding the boundaries of cities throughout the world and includes products from crop and livestock agriculture, fisheries and forestry.
- It also includes non-wood forest products, as well as ecological services provided by agriculture, fisheries and forestry. Often multiple farming and gardening systems exist in and near a single city.

Body:**Peri-urban agriculture and mitigation of effects of climate change:**

- **Green zones around urban areas:** Beyond the agro-products provided, trees will help in sustaining ecosystems by acting as carbon sinks, protection of water-supply catchments for the cities, protection against landslides thus helping climate change mitigation.
- **Reduction in phenomenon of Urban heat island:** Due to dense population and use of concrete as building material urban heat islands with higher temperature than surrounding areas are created.
- **Lower need for transportation:** Due to rapid urbanization in the past years, demand for vegetables, fruits and flowers are constantly increasing in these areas. Peri-urban agriculture will reduce the burden on transport, and help in reducing greenhouse gas emissions from cold storages.
- **Diversification of food basket:** Peri-Urban Agriculture can help in climate change adaptation through diversification of food resources for the urban population.
- **Restrict unplanned urbanization:** Unplanned and rapid urbanization causes environmental pollution which causes climate change. Peri-Urban Agriculture will help in creating attractive employment option and prevent the conversion of agricultural land near urban areas into cities and towns

Other merits of Peri-Urban agriculture:

- Urbanisation in India is growing and the problem of food inflation largely rises from the demand-supply gaps in urban areas.
- One way of stabilising the prices of vegetables and fruits in urban areas is to promote peri-urban horticulture by providing the necessary technical and marketing support.
- Decentralised production, as for example in Israel, could be supported by cooperative marketing.
- Urban and peri-urban 'horticulture revolution' could pave the way for more stable prices to the consumer
- At the same time, we should ensure that the quality of the food remains high and free of pesticide residues and other unsafe chemicals.
- Thus, we can ensure stability of supply coupled with high quality and safe food, while contributing to price stability.
- The urban population demands special foods particularly fruits and vegetables. Therefore, a peri-urban farming programme would be timely.

Conclusion:

- With urbanization on the rise, the peri-urban agriculture throws a brilliant opportunity from socio-economic as well as environmental point of view.
- The need of the hour is policy changes like effective legislation for leasing of the plots and gardens through a contract recognized by the municipality and correctly registered to promote participation by potential farmers, vegetable growers and livestock producers.

Q) Discuss the scope of replication of 'White Revolution' in India. (250 words)

Indian Geography by Majid Hussain

Why this question:

The answer must discuss the scope of white revolution.

Key demand of the question:

The answer must evaluate the scope of white revolution in India.

Directive:

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:**

Describe what is white revolution.

**Body:**

The question is direct one has to discuss the success of white revolution in the past and the possible white revolution 2.0 in the coming future.

Students must make use of facts and figures to justify the potential of the revolution in India.

Conclusion:

Conclude with way forward.

Introduction:

- The huge increase in milk supply through concerted efforts on a cooperative level is known as the **White Revolution**. Forty-eight years after **Operation Flood** – that made India the world's largest milk producer – India continues to be on the lookout for the next breakthrough in agricultural produce and productivity.

Body:**Milk production in India:**

- India is the world's largest producer and consumer of dairy products.
- Currently India has 17% of world output of dairy products, surpassing USA in 1998 as world's largest producer of dairy. All this was achieved by operation Flood which was launched in 1970's.
- According to market research company IMARC, the milk and dairy products industry reached Rs7.9 lakh crore in 2017.
- In 2016, the milk sector alone was valued at Rs3 lakh crore and is projected to scale Rs7.3 lakh crore by 2021.
- The per capita milk availability in India has gone up from 126 gm per day in 1960 to 359 gm per day in 2015.

Potential of dairy sector:

- The dairy industry in India is unique. With six lakh villages housing about 90 crore people, dairying is not just a large economic activity but also an integral part of our social and cultural heritage
- Its uniqueness lies in its unifying power, in the fact that no other industry touches lives of millions of farmers, of which 70 per cent are landless.
- Complementing this are Indian climatic conditions that support animal husbandry. Dairy, in effect, could become a great tool for equitable growth and income distribution.
- What remains is providing market access by offering stable and remunerative prices to farmers and encouraging this generations-old sustainable livelihood source.
- Can help small farmers to reduce dependence on crop sales
- Can increase source of income of farmers in low yielding areas like Marathwada, Bundelkhand etc
- India is surrounded by countries and regions that are milk-deficient, such as the Middle East, South Asia and Southeast Asia.
- There is ample scope for export of value-added milk products to Bangladesh, China, Singapore, Thailand, Malaysia, Philippines, Japan, the UAE, Oman and other gulf countries, all of which are located close to India.
- At present, the population of South Asia alone is growing at 1.3 per cent a year; it is likely to be 2.2 billion by 2050. This presents an opportunity for India's dairy industry.

Need for White Revolution 2.0:

- As per UN-DESA estimates, by 2025, India will beat China to become the most populous country in the world with 1.4 billion people.
- Further, by 2060, 56 per cent Indians will reside in urban areas and 44 per cent in rural areas. India is likely to have 143 cities with a population of more than one million by 2060.
- On the other hand, the number of villages will witness only a marginal increase, from 640,000 lakh in 2012 to just 675,000 lakh in 2060.
- This clearly indicates that India will face the problem of 'mouths to feed' growing faster than 'hands to produce'.
- To help alleviate the agrarian distress this is being faced in past 5 years.
- To reduce the malnourishment and increase the "milk security" for every citizen.

Challenges to White Revolution 2.0:

- The Indian cows and buffaloes are generally low yielding and non-descript because of the lack of healthy cattle-feed and fodder, tropical heat and diseases.
- Despite lack of water and gradually declining arable land, dairy farming is on the rise.
- Free trade agreements, or FTAs, for instance, will allow EU government-subsidised products to be imported from Europe with little entry barriers. This will pose a big challenge to cow-farmers.
- Due to unhygienic production, handling conditions and high temperatures, the quality of milk is adversely affected.



- Because of inadequate marketing facilities, most of the marketable surplus is sold in the form of ghee which is the least remunerative of all milk products.

Measures needed:

- Education and Training at Panchayat level for small and medium size farmers
- Subsidizing cattle production and encouraging cattle markets
- Facility of logistics for produced milk
- Improved Veterinary facility specially in artificial insemination of cattle
- Encouraging private sector firm to procure dairy produced at rural level
- Low interest loans for small and medium scale farmers for cattle purchase
- Encouraging rural women to take up animal husbandry
- Insurance of cattle against diseases like Anthrax, Foot and Mouth, Peste des Ruminantes, etc.
- Nurture dairy entrepreneurs through effective training of youth at the village level coupled with dedicated leadership and professional management of farmers' institutions.
- Agricultural practices, sanitation, quality of drinking water & fodder, type and quality of pipelines – all of these need to be aligned to the goal of healthy milk.

Q) Discuss the pattern of land holdings in India and the challenges related to land fragmentation also suggest possible solutions to the problems. (250 words)

A comprehensive geography by Khullar

Why this question:

The question is about dealing the issues related to agriculture with specific focus on land holdings and land fragmentation issues.

Key demand of the question:

The answer must discuss the problems related to land holdings, land fragmentations and their effect on the agriculture practices of the country and farm income.

Directive:

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:

Begin with brief write up on the current conditions of land holdings.

Body:

Discussion should include the following:

Paint a picture of the current status of land holdings in India, what are the issues associated with it, why is it a cause of concern? What are the challenges posed by it etc.

Then discuss the impact of it on farmers, what needs to be done to overcome the challenges and concerns.

Conclusion:

Conclude with solutions and suggest way forward.

Introduction:

- The term land holding or 'agricultural holding' indicates average size of agricultural land held by the farmers in India.
- The number of small and marginal agricultural land holdings in the country (known as operational holdings) has registered a marginal increase in 2015-16 compared to 2010-11, according to the **Tenth agricultural census**. This means that there are more people who now own smaller parcels of agricultural land.

Body:

Trends in land holding (Agricultural Census 2015-16):

Classification	Range (ha)	2010-11 (mn.)	2015-16 (mn.)	% change
Small	<1	117.25	125.86	7.34%
Medium	1-4	19.72	19.3	-2.13%
Large	4-10	0.98	0.83	-15.31%



- The percentage of land holders who are women has increased from 12.79% in 2010-11 to 13.87% in 2015-16, with a corresponding increase of 1.2 percentage points in the operated area.
- This shows that more and more females are participating in the management and operation of agricultural lands.
- Marginal, small and medium land holdings constitute the lion's share of operated area – large land holdings account for only 9% of the total operational area.
- The average size of operational holdings is highest in Nagaland (5 hectares) and lowest in Kerala (0.18 hectares).
- The total number of land units used for agricultural production has shown a 5% increase in 2015-16 compared to 2010-11.
- The total number of operational holdings in the country has increased from 138 million in 2010-11 to 146 million in 2015-16.
- Uttar Pradesh is home to the largest number of land holders, constituting 16% of the total number.

Land fragmentation

- It refers to the breakdown of the landholdings to smaller, unviable tracts of lands due to inheritance laws.
- The land belonging to the father is equally distributed among his sons. This distribution of land does not entail a collection or consolidated one, but its nature is fragmented.
- Demographic pressure has pushed down the land: man ratio to less than 0.2 hectares of cultivable land per head of rural population.
- It has also progressively pushed down the size structure of landholdings.
- The problem of small and fragmented holdings is more serious in densely populated and intensively cultivated states like Kerala, West Bengal, Bihar and eastern part of Uttar Pradesh where the average size of land holdings is less than one hectare and in certain parts it is less than even 0.5 hectare.
- About 92% of holdings operated by SC groups comprised small and marginal holdings.

Challenges posed by Land fragmentation:

- Sub-division and fragmentation of the holdings is one of the main causes of our low agricultural productivity and backward state of our agriculture.
- A lot of time and labour is wasted in moving seeds, manure, implements and cattle from one piece of land to another.
- Irrigation becomes difficult on such small and fragmented fields.
- Further, a lot of fertile agricultural land is wasted in providing boundaries. Under such circumstances, the farmer cannot concentrate on improvement.
- The farm mechanization cannot be applied in small land holdings.
- Although legislation for consolidation of holdings has been enacted by almost all the states, it has been implemented only in Punjab, Haryana and in some parts of Uttar Pradesh.
- The shrinking of productive agricultural land and land base being utilized for non agricultural purposes also makes the crises of fragmented land holdings multi-dimensional.
- Research suggests that only 14% of marginal and 27% of small holdings were able to get credit from institutional sources whereas about 33% of medium and 29% of large farmers could avail institutional credit in India.
- Producers with small holdings also often face problems due to inefficiencies in transporting their produce leading to increased dependence on middlemen. Therefore, there is loss of income which becomes the middleman's commission.

Measures needed:

- To ensure farmer-centric agricultural development, land consolidation efforts for good quality and efficient farming needs to be undertaken.
- **Cooperative farming:** Cooperative farming is a method wherein farmers pool their resources in certain areas of agricultural activity for mutual benefit.
- **Contract Farming and Collaborative Farming initiatives:** Though contract farming does not directly help in preventing fragmentation, the need of contractual requirements can be a tool for farmers to collaborate for joint cultivation.
- **Corporate farming:** Large corporate and MNCs that are into agricultural supply chain often try to integrate and consolidate their product supply chains to have better control on costs and ensure supply security.



- NGOs, farmer associations and the extension wing of the agricultural ministry at the grass root level should educate small and marginal farmers on the benefits of land consolidation which will reap benefits in scaling up of their operations and increasing profitability.
- India has a robust and effective Panchayati Raj system that is an institutional forum for undertaking developmental projects. Pilot studies of collective farming, structured and monitored by the Panchayats can be undertaken at various gram and zila parishad levels.

Conclusion:

- While Indian agriculture has shown resilience to many shocks that penetrated into the world in the last decade, the farmers are successfully producing crops in spite of many hardships. However, all this will change in the coming decades as growing population, further fragmentation, land conversion will lead to lower productivity, shortage of labour and dwindling natural resources.
- These may put us back in the grip of a perennial food crisis. There is, therefore, a great responsibility on the farming community and the government alike to realize this future shock and take proactive steps to avoid such crises. Consolidation is one such solution theme.



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

Q) What are the challenges facing Indian Telecom sector? Discuss. Also suggest what needs to be done to overcome these challenges. (250 words)

Livemint

Why this question:

The article discusses in detail the challenges that are Indian telecom sector is facing.

Key demand of the question:

One has to detail upon the list of issues Indian telecom sector is facing and suggest what needs to be done.

Directive:

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:

Begin with brief introduction – quote facts on the current scenario.

Body:

Discussion should include the following:

- Explain Challenges in Telecom Sector – Lack of fixed line penetration, High Right-of-Way (ROW) cost, spectrum allocation, corruption etc.
- Explain the initiatives taken by the government in this direction to resolve the concerns.
- Then move on to suggest solutions as to what can be done.

Conclusion:

Future of Telecom Sector is very bright as its role will be seen in almost everything. A long-term vision plan should be made accordingly. For the time being, the government needs to provide an easy and soothing environment for telecom operators.

Introduction:

- India's telecom industry has been through a paradigm shift over the last three decades.
- The industry has also undergone significant policy and regulatory changes through the years, in essence, leading to a control of market share of services by a few players.
- Despite its considerable place in the Indian economy, the telecom sector is under stress due to mounting debt and other issues.

Body:

The challenges facing Indian telecom sector are:

- **Financial Health of the Sector:** Gross revenue has dropped by 15% to 20% for the year 2017-18 over the preceding year for the incumbents and overall sector revenue has dropped. Also, there is drop in voice and data revenue per user
- **Limited Spectrum Availability:** Available spectrum is less than 40% as compared to European nations and 50% as compared to China. Hence, it is imperative that spectrum auctioning at sustainable prices is the need of the hour. Also, government auction spectrum at an exorbitant cost which makes it difficult for mobile operators to provide services at reasonable speeds.
- **High competition and tariff war:** Competition heating up post entry of Reliance Jio. Other telecom players have to drop in tariff rates both for voice and data
- **Lack of Telecom Infrastructure in Semi-rural and Rural areas:** Service providers have to incur huge initial fixed cost to enter semi-rural and rural areas. Key reasons behind these costs are lack of basic infrastructure like power and roads, resulting in delays in rolling out the infrastructure.
- **Poor fixed line penetration:** India has very little penetration of fixed line in its network whereas, most of the developed countries have a very high penetration of fixed lines
- **High Right-of-Way (ROW) cost:** Sometimes, states governments charge a huge amount for permitting the laying of fibre etc.
- **Lack of trained personnel** to operate and maintain the cellular infrastructure.
- **Delays in Roll Out of Innovative Products and Services:** Substantial delays in roll out of data-based products and services are hampering the progress of telecom sectors. This is primarily due to the non-conducive environment resulting out of government policies and regulations.



- **Low Broad Band Penetration:** Low broadband penetration in the country is a matter of concern and the government needs to do a lot more work in the field to go up in the global ladder.
- **Over the top services:** Over the Top (OTT) applications such as WhatsApp, OLA, Viber and so on do not need permission or a pact with a telecommunications company. This hampers the revenue of telecommunication service provider.
- **License fee:** The license fee of eight per cent of the Adjusted Gross Revenue including five per cent as Universal Service Levy (USL) is one of the highest in the world.

Measures needed:

- **Infrastructure Sharing:** Since telecom business is heavy on capex and as much as 40%– 60% of the Capex is utilized for setting up and managing the Telecom infrastructure. By sharing infrastructure, operators can optimize their capex, and focus on providing new and innovative services to their subscribers.
- **Availability of Affordable Smart Phones and Lower Tariff Rates:** This would increase tele penetration in rural areas.
- **Curb on predatory pricing:** government should fix a minimum price to save the industry from price war
- **Lower License fee:** The license fee of eight per cent of the Adjusted Gross Revenue including five per cent as Universal Service Levy (USL) is one of the highest in the world.
- **Reduce reserve price for spectrum auction:** In the past, some of the operators participated recklessly in these auctions leading to exaggerated prices — much above their true valuations. Reasonable reserve prices for the market mechanisms induce “truthful bidding”, and not leading to “winners’ curse” as witnessed in some of the previous auctions.
- The government should increase the network area through optical fibre instead of copper which is expensive. This is necessary to ensure last mile connectivity.
- The government needs to prepare a ground for easy right-of-way permissions and lower cost of right-of-ways
- The government should spend large on R&D and create an environment that makes India capable of manufacturing and even exporting hardware components like mobile handsets, CCTV Cameras, touch screen monitors etc.

Conclusion:

- Digital India Initiative of government including digital identification and authentication, e-KYC, digital finance depends heavily on the telecom and broadband infrastructure.
- Economic survey 2017-18 also underlined that the ‘crisis’ being faced by telecom sector. Survey added that it has also deeply impacted their investors, lenders, partners and vendors.
- A long term vision plan should be made accordingly. For the time being, the government needs to provide an easy and soothing environment for telecom operators.

Q) Discuss the role played by transport infrastructures in developing financial markets vis-à-vis economic growth. (250 words)

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Why this question:

The article discusses in detail a study that highlighted how The Golden Quadrilateral highway network spurred greater financial activity but only in areas with existing financial development.

Demand of the question:

The answer must discuss the role played by infrastructures in developing financial markets vis-à-vis economic 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

Start with brief introduction on importance of transport system for economic growth of a country.

Body

One can have the following points in the answer:

Economic Growth: A good transportation system is an important selling point to communities that desire to attract development that provides for employment and growth of a city. If transport costs due to congestion increase, goods and services produced within that city tend to increase in costs thus



losing competitiveness in international markets. Efficient transportation access is therefore a very important consideration as it has a direct impact on sound and sustainable economic growth and productivity. The cost of congestion in the Western Province of Sri Lanka is over Rs 20,000 million per year (around 2 percent of Regional GDP). This includes the cost of productive time and wastage of fuel.

Quality-of-Life: To some people, congested highways are a symptom of deteriorating quality-of-life-in a community. The amount of time that is spent on commuting to and from work is also in reality, time that is taken away from social interactions or pursuit of activities that have a personal value and satisfaction.

- Discuss in detail how investing in infrastructure in regions with basic financial development can help regions overcome barriers to economic growth.
- Explain with the case study of India's Golden Quadrilateral network.
- Discuss the Indian scenario – present status, what more needs to be done in this direction etc.

Conclusion

Conclude that financial markets respond to large infrastructure investments and helps spur real economic outcomes contingent on initial financial sector development

Introduction:

- Infrastructure is a key driver of the overall development of Indian economy.
- It is seen that investments in infrastructure equal to 1% of GDP will result in GDP growth of at least 2% as infrastructure has a “**multiplier effect**” on economic growth across sectors.
- The recent headway made in developing transport infrastructure will prove to be the biggest enabler for growth.

Body:

- The critical role of finance in economic growth is widely acknowledged and developing well-functioning financial markets has become a central focus of economic policies across the world.
- A new World Bank study suggests that investing in infrastructure in regions with basic financial development can help these regions overcome barriers to economic growth.

The role played by transport infrastructures in developing financial markets vis-à-vis economic growth:

- Infrastructure development helps in **poverty reduction** due to its high employment elasticity leading to huge job creation capabilities.
- It also has the **trickle-down effect** as better transportation infra can lead to access to education, health and other basic necessities.
- **Increasing the manufacturing growth** as there is better connectivity, easier movement of goods and services, facilitating private investments
- **It reduces the regional and inter-state disparities** and leads to a balanced economic growth by regional equality.
- Infra sector **has huge spill-over effects** on other sectors of economy. It **has money-multiplier** effect too.
- **Better quantity and quality of infrastructure** can directly raise the **productivity of human and physical capital** and in turn growth of nation.

The progresses made in creating an efficient transport infrastructure in the country are

- At the highest ever pace of construction, more than 35,000 km of national highways has been built in last four and a half years.
- World-class expressways such as the Eastern Peripheral Expressway and Western Peripheral Expressway.
- Technologically sound projects which are engineering marvels such as the Dhola-Sadiya Bridge, Chenani Nashri Tunnel and Bogi-Beel bridge.
- The **Bharatmala Pariyojana** is unique and unprecedented in terms of its size and design, as is the idea of **developing ports as engines of growth under Sagarmala**.
- The development of **111 waterways** for transport, **FASTags** for quicker toll payment and movement of vehicles on highways.
- The promotion of alternative fuels such as **ethanol, methanol, biofuels, and electricity**, as well as innovative modes of travel such as seaplanes and aeroboats. The concept of ‘**waste to wealth**’ is being employed for generating alternative fuels.
- Measures are taken to enhance road safety like the **Motor Vehicles Amendment Bill, The Good Samaritan law etc, reducing congestion and pollution levels and providing roadside amenities**.



- Connectivity to our neighbouring countries using an optimal mix of roads and waterways lie Afghanistan and beyond through Chahbahar, or Bangladesh, Myanmar and Thailand through upcoming highways and waterways.
- A memorandum of understanding (MoU) has been signed with Austrian ropeway company Doppelmayr for building ropeways through congested cities and hilly areas.

Impact of infrastructure projects on financial markets:

- Infrastructure investment can help financial markets converge towards more developed regions.
- Financial markets respond to large infrastructure investments and helps spur real economic outcomes contingent on initial financial sector development.
- Consequently, areas with high initial financial sector development will play an important role in determining where economic activity will grow.
- Caution must be taken against simply investing in large-scale infrastructure and hoping that this will automatically develop financial markets.

Case study: the construction of **India's Golden Quadrilateral central highway network**, together with comprehensive loan data from the Reserve Bank of India, the study finds a disproportionate increase in the number of loans disbursed and average loan size in newly connected districts along India's Golden Quadrilateral network. The improved transportation infrastructure results in increased economic activity which in turn increases bank lending. Importantly, the authors find that these effects were stronger in districts where the banking sector and financial institutions were already sufficiently developed

Conclusion:

- An efficient transport infrastructure is the biggest enabler for growth.
- India's growth story should no longer be impeded by a lack of efficient transport infrastructure, and the fruits of this growth should reach everyone in the remotest part of the country.

Q) The mobility landscape in India is undergoing a remarkable and revolutionary change with ecological responsibility and clean mobility making inroads in the country. Analyse in detail the transition from fossil fuels to the electric vehicles. (250 words)

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Why this question:

The article talks about the mobility sector and the transformation it is undergoing in India.

Key demand of the question:

The answer must analyse in detail the new agenda that is focusing on electric mobility in India.

Directive:

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:

Begin by explaining the statement in the question and suggest its significance.

Body:

Discussion should include the following:

- First quote facts/data related to the transport and mobility sector in India.
- Explain what is the new transformation? Why is it?
- What are the associated challenges/concerns?
- What needs to be done?
- Role of all stakeholders etc.

Conclusion:

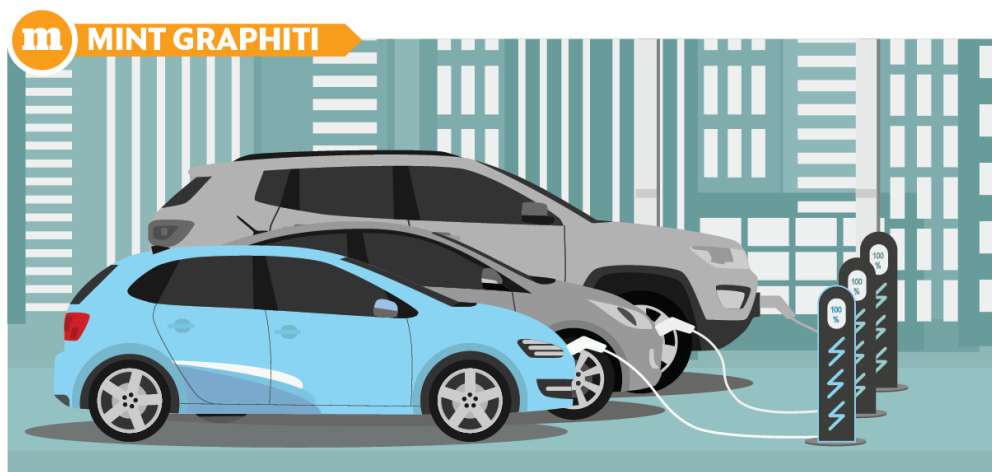
Conclude by stating that the transformation is inevitable given the current circumstances and rising population pressure and their demands.

Introduction:

- Electric vehicles (EVs) are automobiles that run on electricity only. They are propelled by one or more electric motors powered by rechargeable battery packs. Electric vehicles are cleaner than petroleum-fuelled vehicles and are seen as a promising solution to global warming.

**Body:**

- Indian government is making strong push in favour of the electric vehicles or the e-vehicles. Government is also encouraging or sometimes even forcing auto industry to shift towards the e-vehicles. While e-vehicles have their benefits over normal vehicles, the topic of e-mobility seems to be missing from the agenda of the government.
- E-vehicles reduce the localized pollution and are important in the cities like Delhi, Pune, Lucknow etc. Such vehicles would also reduce the dependence on the petroleum, import of which has adverse effect on Indian economy. E-vehicles are also instrumental in reducing the emission of green-house gases and many health hazards.



Building the momentum

The government has been urging the automakers and component manufacturers to invest in development of EVs, and has also sanctioned an outlay of ₹10,000 crore to promote adoption of electric mobility.

Components of EV ecosystem

DEMAND SIDE FACTORS

SUBSIDIES and incentives including fiscal and non-fiscal incentives like registration tax, grants, tax waive-offs, buyback of old vehicles, free parking etc.

DEMAND aggregation like bulk procurement

SUPPLY SIDE FACTORS

MANUFACTURING incentives like provision of land at subsidized rates, tax holiday, special zones

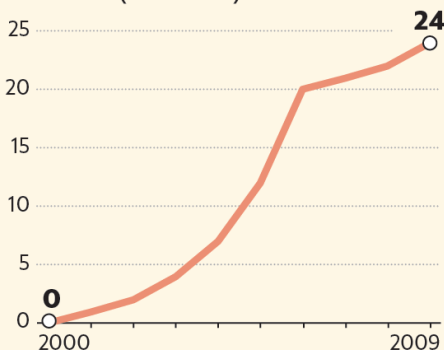
ACCELERATED research and development promoted industry partnerships

ENABLERS

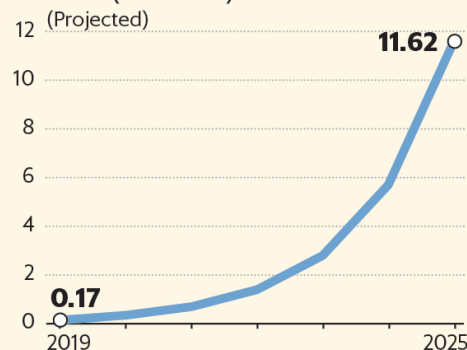
CHARGING infrastructure, institutional mechanisms, technology, financial mechanisms, policy framework

Electric two-wheeler potential

Electric two-wheeler growth in China (in million)



Electric two-wheeler growth in India (in million)



Source: Automotive Component Manufacturers Association of India (ACMA) and Roland Berger



Challenges facing the transition:

- **Price Volatility:**
 - The first has to do with policy volatility. E-mobility is a nascent industry in India and most of the developing countries. Capital costs are high and the payoff is uncertain.
 - Inconsistencies remain. For instance, while electric vehicles are taxed at 12% under the goods and services tax (GST), batteries were taxed at 28% until recently. This has now been lowered to 18% but the discrepancy still exists.
- **Lack of policy certainty: Cannot frame in Isolation:**
 - The lack of policy certainty spills over into perhaps the single most important element of enabling e-vehicle usage: charging infrastructure.
 - Lack of attention on building charging infrastructure.
- **Local and Private Investment results in Low Cost production Technology:**
 - Localization is another tricky area, as the strife caused by the rupee's depreciation has shown.
 - India does not have any known reserves of lithium and cobalt, which makes it entirely dependent on imports of lithium-ion batteries from Japan and China.
- **Short Driving Range and Speed**
 - Most of these cars have range about 50-100 miles and need to be recharged again.
- **Battery Recharge Issues**
 - An electric car takes about 4-6 hours to get fully charged. Therefore there is a need for dedicated power stations as the time taken to recharge them is quite long.
- **Silence as Disadvantage**
 - Silence can be a bit disadvantage as people like to hear noise if they are coming from behind them
 - An electric car is however silent and can lead to accidents in some cases.
- **Limited seating capacity**
 - They are not meant for entire family and a third person can make journey for other two passengers bit uncomfortable.
- **Not Suitable for Cities Facing Shortage of Power**
 - Cities already facing acute power shortage are not suitable for electric cars.
 - The consumption of more power would hamper their daily power needs.
- **High cost**
 - The primary reason for the current high prices of EVs is the expensive battery

Way forward:

- For EVs to contribute effectively, we need commensurate efforts in developing an entire ecosystem.
- Need to shift the focus from subsidizing vehicles to subsidizing batteries because batteries make up 50% of EV costs.
- Increasing focus on incentivizing electric two-wheelers because two-wheelers account for 76% of the vehicles in the country and consume most of the fuel.
- A wide network of charging stations is imminent for attracting investment.
- Work places in tech parks, Public bus depots, and Multiplexes are the potential places where charging points could be installed. In Bangalore, some malls have charging points in parking
- Corporates could invest in charging stations as Corporate Social Responsibility compliances.
- Addressing technical concerns like AC versus DC charging stations, handling of peak demand, grid stability etc.
- Private investment in battery manufacturing plants and developing low cost production technology is needed.
- India is highly dependent on thermal sources, which account for about 65% of current capacity. As EV adoption increases, so should the contribution of renewables.
- Need for a policy roadmap on electric vehicles so that investments can be planned.
- Acquiring lithium fields in Bolivia, Australia, and Chile could become as important as buying oil fields as India needs raw material to make batteries for electric vehicles.
- Providing waiver of road tax and registration fees, GST refunds and free parking spaces for EVs.



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

Q) AI-driven technology will become counterproductive if a legal framework is not devised to regulate it. Discuss. (250 words)

The hindu

Why this question:

The article discusses in detail how AI-driven technology will become counterproductive if a legal framework is not devised to regulate it.

Key demand of the question:

The answer must discuss as to how if AI is not regulated properly, it is bound to have unmanageable implications. One has to explain the nuances of the law to regulate the use of AI.

Directive:

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:

In a few introductory lines discuss the issues and concerns around using AI.

Body:

In brief discuss what are the possible challenges that could be posed by AI in the absence of proper regulations. Explain predicting and analyzing legal issues and their solutions, however, is not that simple.

Suggest what should be the way forward.

Conclusion:

Conclude with what more needs to be done.

Introduction:

- Artificial Intelligence is a way of making a computer or a software think intelligently, in the similar manner the intelligent humans think. AI is associated with superlative memory, calculative power, decision-making capacity, high speeds of action.
- AI is wholly based on data generated and gathered from various sources and has lot of chances to be in conflict with law. Our laws will eventually need to be amended or new laws for artificial intelligence technologies and processes will need to be adopted to fill up existing lacunae.

Body:

Recent AI developments in India: the various instances below symbolise the arrival of Artificial Intelligence (AI) in everyday lives of human beings.

- Kerala police inducted a robot for police work.
- Around the same time, Chennai got its second robot-themed restaurant.
- Here, robots not only serve as waiters but also interact with customers in English and Tamil.
- In Ahmedabad, a cardiologist performed the world's first in-human tele-robotic coronary intervention on a patient nearly 32 km away.

AI and Legal framework:

- AI systems have the capability to learn from experience and to perform autonomously for humans.
- This also makes AI the most disruptive and self-transformative technology of the 21st century.
- So, if AI is not regulated properly, it is bound to have unmanageable implications.
- g. the consequence if electricity supply suddenly stops while a robot is performing a surgery and access to a doctor is lost
- These questions have already confronted courts in the U.S. and Germany.
- No comprehensive legislation to regulate this growing industry has been formulated in India till date.
- All countries, including India, need to be legally prepared to face such kind of disruptive technology.
- AI is growing multi-fold and we still do not know all the advantages or pitfalls associated with it which is why it is of utmost importance to have a two-layered protection model: one, technological regulators; and two, laws to control AI actions as well as for accountability of errors.

Challenges to AI legal framework:

- Predicting and analysing legal issues in regards with AI use and their solutions are not that simple.
- g. an AI-based driverless car getting into an accident that causes harm to humans or damages property
- In such cases, criminal law may face drastic challenges as the party to be held liable is disputable.



- Legal personhood is inherently linked to individual autonomy but has not been granted exclusively to humans. No law currently in force recognises AI as a legal person.
- Another concern is the ability of an AI to execute and be bound by contracts. While international laws have recognised self-enforcing contracts, there is a need for a comprehensive legislation on the subject.
- Under Indian law only a “legal person” can be competent to enter a valid contract. The general rule thus far has been that an AI may not qualify as a legal person. Hence, a contract entered into by an AI of its own volition may not be regarded as a valid contract in India.
- Another issue that arises is attributing liability to an AI. The general rule has been that since an AI cannot qualify as a legal person, it cannot be held liable in its own capacity.

Way Forward:

- The first need is to have a legal definition of AI in place.
- It is essential to establish the legal personality of AI which means AI will have a bundle of rights and obligations, in the context of India’s criminal law jurisprudence.
- Since AI is considered to be inanimate, a liability scheme that holds the producer or manufacturer of the product liable for harm must be considered.
- Moreover, since privacy is a fundamental right, certain rules to regulate the usage of data possessed by an AI entity should be framed.
- This should be a part of the Personal Data Protection Bill, 2018.

Conclusion:

- The present debate about AI is between human redundancy and evolution of technology. Either way, the reality is that AI has entered the market and, pros and cons aside, the need of the hour is to estimate the problems and have solutions to deal with them in advance.

Extra information:

Case study: Let’s take the example of AI in the form of personalised chatbots. Chatbots are chat-based interfaces which pop up on websites with which customers can interact. These chatbots can either follow a scripted text or through machine learning (ML) and increased interaction deviate from the standard questions to provide a more human-like interaction. In the course of communicating with the chatbot, if a person were to divulge sensitive personal information for any reason whatsoever, what happens to this data?

- Disclosure of sensitive personal information in the digital space would fall within the purview of the IT (Reasonable Security Practices and procedures and sensitive personal data or information) Rules, 2011.
- So in the case of an ML chatbot which does not work as per a scripted text and has collected sensitive personal information, who is responsible if Rule 5(3) is breached? The most obvious answer would be the business unit/company because the rules in the 2011 Rules state that “The body corporate or any person who on behalf of the body corporate...” collects information. However, could the business possibly avoid liability by claiming that it was not aware that the chatbot, due to its AI ability of machine learning, had collected sensitive and personal information?
- We do not have any clear provisions for advanced chatbots which do not work on a scripted text. With the lack of a clear provision in the law, accountability may take a hit. Additionally, what happens if an AI robot is given citizenship in India? Who is responsible for their actions? Or in case of autonomous car accidents, who is responsible for damage to property or harm caused or death of a person?

Q) “Rising machine intelligence is a double-edged sword”, Elucidate. (250 words)

[Livemint](#)

Why this question:

The question is straightforward, the article analyses the pros and cons of AI in detail.

Key demand of the question:

Discussion should focus mainly in evaluating the Technology of artificial intelligence.

Directive:

Elucidate – Give a detailed account as to how and why it occurred, or what is the particular context. You must be defining key terms where ever appropriate, and substantiate with relevant associated facts.

Structure of the answer:

Introduction:

Begin with brief introduction on what you understand by AI.

Body:



Explain that There has been a growing chorus of alarm about the existential threat of Artificial Intelligence (AI). Eminent personalities such as Stephen Hawking, Steve Wozniak and Elon Musk have come out in public to state that if we continue to blindly develop machine intelligence, we will inevitably get to a point where machine intelligence will exceed that of humans.

Argue both the sides – for and against and form a fair and balanced opinion suggesting a way forward.

Conclusion:

Conclude by reasserting the need to moderate the use of such technologies and need for exercising care to experiment with.

Introduction:

- Machine learning is part of a broader family of machine learning methods based on learning data representations, as opposed to task-specific algorithms. Neural network depicts the complex interlinkages of the different data that is accumulated over time, like in a brain.
- Eminent personalities such as Stephen Hawking, Steve Wozniak and Elon Musk have come out in public to state that if we continue to blindly develop machine intelligence, we will inevitably get to a point where machine intelligence will exceed that of humans.

Body:

Pros of Rising Machine intelligence:

- There is an artificial intelligence (AI)-driven \$15.7 trillion game-changer that is unfolding. Of this, India can claim a \$957 billion boost to its gross domestic product in the next 12-15 years.
- The global digital transformation market is expected to grow from \$ 445.4 billion in 2017 to \$ 2,279.4 billion by 2025.
- The World Economic Forum estimates 133 million new roles may emerge globally in a few years.
- These new jobs will be different and will require higher application of cognitive skills alongside working with deep technologies.
- The race for talent acquisition is intense. Countries have started to put in place national digital skills strategies, including in Asia.
- Increasingly powerful computing devices and networks, digital services, and mobile devices, this can become a reality for people around the world, including those in underdeveloped countries.
- Advances in biomedical sciences can lead to healthier lives and longer life spans. They can lead to innovations in neuroscience, like connecting the human brain to computers to enhance intelligence or experience a simulated world.
- Digital technology can liberate workers from automatable tasks, freeing them to concentrate on addressing more complex business issues and giving them more autonomy.

Cons of Rising Machine intelligence:

- The cutting-edge technologies such as AI will disrupt 70% of market leaders across industries in the next 10 years.
- The **World Economic Forum** estimates 75 million jobs may be displaced globally in a few years.
- McKinsey says globally, 400 to 800 million jobs may be displaced by 2030, requiring as many as 375 million people to switch job categories entirely.
- The **skill gap is significant** and is being acutely felt across industries.
- The economic benefits of the rising AI are becoming more concentrated among a small group.
- This **increasing inequality** can lead to political polarization, social fragmentation, and lack of trust in institutions.
- Technological advances are also broadening the **scope of surveillance**. In the UK today, an estimated 6 million CCTV cameras are recording activity all over the country.
- **Public trust in business, government, the media, and even technology is falling**. This is a crisis that is dividing societies and creating instability around the world

Way forward:

- **Re-Skilling:**
 - Re-skilling and upskilling will have to be undertaken by every stakeholder.
 - Massive open online courses to re-skill the Workforce participants by companies using their own learning platforms and tapping into their partner networks.
 - Learning has happened in silos where learners have been pitted against one other. This has to morph into a collaborative mindset to create an environment of shared learning.



- Industry needs to have deeper engagements with academia, Centres of Excellence and research labs to reach our optimum potential.
- Universities will have to re-train to ensure students are employable in the digital era.
- **Investment:**
 - Indian IT is taking convincing strides to sustain its position as the preferred transformational partner for global clients. Towards this, investments of about ₹10,000 crore have been earmarked for re-skilling.
 - The government doubled its Digital India budget to \$480 million in 2018-19, which will be used for research and training in deep tech.
- **Initiatives:**
 - The announcement of the National AI Centre, AI portal, and the identification of nine areas to be driven by technology are positive steps towards evangelisation.
 - the Karnataka government along with Nasscom has launched a CoE for data science and AI.
- **Global Approach:**
 - As many as 20 countries across the globe have adopted AI National Strategy. Governments worldwide recognise the inevitable shift and are adopting AI, analytics, and allied technologies to deliver citizen-centric services, including real-time response.

Conclusion:

- We have to consciously build positive values into the technologies we create, think about how they are to be used, and design them with ethical application in mind and in support of collaborative ways of preserving what's important to us.
- This effort requires all stakeholders—**governments, policymakers, international organizations, regulators, business organizations, academia, and civil society**—to work together to steer the powerful emerging technologies in ways that limit risk and create a world that aligns with common goals for the future.

Q) What do you understand by 'Superconductivity' ? Give it uses and applications. also, the claim of superconductivity to work at room temperature has been claimed to be significant, discuss why ? (250 words)

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

Why this question:

The article discusses the recent research with respect to superconductivity. IISc researchers have reported superconductivity at room temperature. Their finding, now under review, will be a breakthrough if verified.

Key demand of the question:

The answer must explain the concept of superconductivity and the significance of recent discovery in this direction.

Structure of the answer:

Introduction:

Begin with brief introduction on the concept of superconductivity.

Body:

Discussion should include the following:

Superconductivity is a phenomenon which occurs in certain materials and is characterized by the absence of electrical resistivity, Superconductors have the ability to conduct electricity without the loss of energy. Inside a superconductor the behaviour of electrons is vastly different. The impurities and lattice are still there, but the movement of the superconducting electrons through the obstacle course is quite different.

Then move on to explain the merits and demerits, significance.

Conclusion:

Conclude with way forward.

Introduction:

- Superconductivity is a state in which a material shows absolutely zero electrical resistance. While resistance is a property that restricts the flow of electricity, superconductivity allows unhindered flow
- Materials are said to be exhibiting superconductivity when they exhibit the following two characteristics after being cooled below their critical temperature: **zero electrical resistance and expulsion of magnetic fields (Meissner effect).**



- All the electrons align themselves in a particular direction, and move without any obstruction in a “coherent” manner. Because of zero resistance, superconducting materials can save huge amounts of energy, and be used to make highly efficient electrical appliances. IISc researchers have reported superconductivity at room temperature. Their finding, now under review, will be a breakthrough if verified.

Body:

Applications:

- **SQUIDS (Superconducting Quantum Interference Devices)** can be used to take **magnetic cardiograms** based on magnetic fields generated by electrical currents in the heart.
- These are used in the **memory components of computers** and **fast digital circuits** (including those based on Josephson junctions and rapid single flux quantum technology).
- **Transportation:** powerful superconducting electromagnets used in **maglev trains**, magnetic confinement fusion reactors (e.g. tokamaks), and magnets used in particle accelerators
- **Transforming the Electricity Grid:** Superconductor technology provides loss-less wires and cables and improves the reliability and efficiency of the power grid. It saves power and with it the financial savings and the environmental benefits also accrue
- **Medical diagnosis:** One of the first large-scale applications of superconductivity is in medical diagnosis. **Magnetic resonance imaging, or MRI**, uses powerful superconducting magnets to produce large and uniform magnetic fields inside the patient’s body.
- Superconductors are also being employed for **undersea communication, submarine detection and geophysical prospecting**
- **high sensitivity particle detectors, including the transition edge sensor, the superconducting bolometer, the superconducting tunnel junction detector, the kinetic inductance detector, and the superconducting nanowire single-photon detector**
- **rail gun and coilgun magnets**
- **electric motors and generators**

Significance of Superconductivity at room temperature:

- Superconductivity is a phenomenon that, so far, has been possible only at extremely low temperatures, in the range of 100°C below zero.
- In recent years, scientists have been able to find superconductive materials at temperatures that are higher than absolute zero but, in most cases, these temperatures are still below -100°C and the pressures required are extreme.
- Creating such extreme conditions of temperature and pressure is a difficult task.
- The search for a material that exhibits superconductivity at room temperature, or at least manageable low temperatures, has been going on for decades, without success.
- Indian scientists have invented a material using silver nanoparticles embedded in a gold matrix that exhibited superconductivity in room temperature.
- If the claimed discovery were confirmed, it could be one of the biggest breakthroughs in physics in this century so far.

Conclusion:

- Technical barriers have till now hindered the large scale usage of superconductivity phenomenon. With the new discovery, the true potential of super-conductivity can be reached out for socio-economic development of the country.

Topic: Conservation, environmental pollution and degradation, environmental impact assessment

Q) Necessity to view sustainable development from the prism of interest of flora and fauna and not just from the standpoint of human beings is the need of the hour. Discuss. (250 words)

Epw

Why this question:

The article brings out the case study of Reintroduction of the Asiatic Lion and amidst

Key demands of the question:

The answer should discuss the statement and need for eco centric approach.

**Directive:**

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:**

One can start by bringing out the need for such an approach in the current times.

Body:

Answer to the question should highlight the significance of eco-centric approach, necessity to view sustainable development from the prism of interest of flora and fauna and not just from the standpoint of human beings. Specifically with respect to the concept of eco-centrism. One can take hints from the article and discuss the SC verdicts in detail and suggest your opinion in a balanced way.

Conclusion:

Conclude with significance of such conservation efforts.

Introduction:

- The recent controversy over the shifting of mugger crocodiles from their habitat near the Statue of Unity in Gujarat for tourist “safety,” has generated controversy. It is not clear as to whether the legal procedures under the provisions of the Wildlife (Protection) Act, 1972 were followed or not.
- However, the eagerness of the Gujarat government to shift the crocodiles on the presumption that it will cause danger to tourists, is to be contrasted with its vehement opposition to the shifting of few endangered Asiatic lions from Gujarat to a proposed second home in Kuno–Palpur Wildlife Sanctuary in Madhya Pradesh (MP).
- The reluctance of Gujarat to part with Asiatic lions assumes a serious dimension in view of the death of a sizeable number of lions due to the outbreak of suspected canine distemper.

Body:

- The Supreme Court in *Centre for Environmental Law v Union of India* 2013 ruled that Eco-centrism is nature-centred, where humans are part of nature and non-humans have intrinsic value. In other words, human interest does not take automatic precedence and humans have obligations to non-humans independently of human interest. Eco-centrism is, therefore, life-centred, nature-centred where nature includes both humans and non-humans.
- The principle of eco-centrism was relied upon by the Court in highlighting the importance of protecting the fauna and flora
- Sustainable Development and Intergenerational equity presume the superior needs of individuals and distribute the use of natural resources in such a way that it must be fairly conveyed between the present and future generations.

The need for eco-centrism:

- **In ethical terms:** ecocentrism expands the moral community (and ethics) from being just about ourselves. It means we are not concerned only with humanity; we extend respect and care to all life, and indeed to terrestrial and aquatic ecosystems themselves.
- **In evolutionary terms:** ecocentrism reflects the fact *Homo sapiens* evolved out of the rich web of life on Earth – a legacy stretching back an almost unimaginable 3.5 billion years.
- **In spiritual terms:** Many people and some societies have developed ecocentric moral sentiments. There is increasing evidence that ecocentric values are being fused into nature-based, ecocentric spiritualities, many of which are innovative and new. With such spiritualities, even people who are entirely naturalistic in their worldviews, often speak of the Earth and its ecosystems as ‘sacred’ and thus worthy of reverent care and defence
- **In ecological terms:** ecocentrism reminds us that all life is interdependent and that both humans and nonhumans are absolutely dependent on the ecosystem processes that nature provides. An anthropocentric conservation ethic alone is wholly inadequate for conserving biodiversity.

Conclusion:

- The shift has been gradual but steady, but there is still a long way to achieve absolute eco-centrism, if they intend to do so.
- It is imperative that the government and the people realise that the flora and fauna should be at the center of sustainable development for the latter to be successful.



Q) Discuss the potential impact of climate change of world food production. (250 words)

Reference

Why this question:

The article brings out how Climate change is adversely affecting the production of key crops such as wheat and rice, with some countries faring far worse than others.

Key demands of the question:

The answer should evaluate the effect of climate change of world food production.

Directive:

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:

Discuss briefly the issue of Climate change on a larger picture.

Body:

Answer is straightforward and must discuss the impact of climate change on world food production. Take cues from the article and discuss the impact in detail on different parts of the world.

Conclusion:

Conclude with what should be the solution, what needs to be done.

Introduction:

- Food is one of society's key sensitivities to climate. A year of not enough or too much rainfall, a hot spell or cold snap at the wrong time, or extremes, like flooding and storms, can have a significant effect on local crop yields and livestock production.
- Climate change is adversely affecting the production of key crops such as wheat and rice, with some countries faring far worse than others. This is as per research, published in the journal PLOS ONE.

Body:

- The impacts of climate change on global food production are mostly negative in Europe, Southern Africa, and Australia, generally positive in Latin America, and mixed in Asia and Northern and Central America. The study found that about half of all food-insecure countries are experiencing decreases in crop production — and so are some affluent industrialised countries in Western Europe.

Crops:

- The world's top 10 crops — barley, cassava, maize, oil palm, rapeseed, rice, sorghum, soybean, sugarcane and wheat — supply a combined 83 per cent of all calories produced on cropland. Yields have long been projected to decrease in future climate conditions.
- Studies observed that climate change causes a significant yield variation in the world's top 10 crops, ranging from a decrease of 13.4 per cent for oil palm to an increase of 3.5 per cent for soybean, and resulting in an average reduction of about one per cent of consumable food calories from these top 10 crops.
- Crops like soybean and gram are likely to benefit from higher level of CO₂ in atmosphere, which helps in CO₂ fertilisation
- A recent study of global vegetable and legume production concluded that if greenhouse gas emissions continue on their current trajectory, yields could fall by 35 percent by 2100 due to water scarcity and increased salinity and ozone.
- Another new study found that U.S. production of corn (a.k.a. maize), much of which is used to feed livestock and make biofuel, could be cut in half by a 4°C increase in global temperatures—which could happen by 2100 if we don't reduce our greenhouse gas emissions.

Other food products:

- Climate change will not only affect crops—it will also impact meat production, fisheries and other fundamental aspects of our food supply.
- Heat waves, which are expected to become more frequent, make livestock less fertile and more vulnerable to disease. Dairy cows are especially sensitive to heat, so milk production could decline.
- 540 million people around the world rely on fish for their protein and income—but seafood will be impacted by climate change, too.
- Warmer waters can alter the timing of fish migration and reproduction, and could speed up fish metabolism, resulting in their bodies taking up more mercury.



- Aquaculture of fresh water species is also affected by sea level rise as saltwater can move upstream in rivers. For example, in the Mekong Delta and Irawaddy region of Vietnam and Myanmar, the booming catfish aquaculture could be affected by saltwater intrusion.

Rising Diseases:

- Climate change will also enable weeds, pests and fungi to expand their range and numbers. In addition, earlier springs and milder winters will allow more of these pests and weeds to survive for a longer time.
- For example, new virulent mutant strains of wheat rust, a fungal infection that had not been seen for over 50 years, have spread from Africa to Asia, the Middle East and Europe, devastating crops.

Economic losses:

- The world population is expected to grow to almost 10 billion by 2050. With 3.4 billion more mouths to feed, and the growing desire of the middle class for meat and dairy in developing countries, global demand for food could increase by between 59 and 98 percent.
- Immediate impact on supply, causing price shocks and volatility that spread across sectors and borders.
- A severe summer drought in 2012 reduced shipping traffic on the Mississippi River, a major route for transporting crops from the Midwest. The decrease in barge traffic resulted in significant food and economic losses. Flooding which followed in the spring caused additional delays in food transport.

Groundwater:

- Groundwater depletion is a slow-building pressure on our food system.
- About 10 percent of the crops grown in the world's major food production regions are irrigated with groundwater that is non-renewable.
- Aquifers are being drained faster than they're refilling—a problem which will only get worse as the world continues to heat up.
- This is happening in major food producing regions such as the U.S. Great Plains and California's Central Valley, and in Pakistan, India, northeastern China, and parts of Iran and Iraq.

Impacts on India's agriculture profile due to climate change:

- India is fortunate to have the monsoon, but it is also uniquely vulnerable to rising temperatures.
- India is ranked **14th on the Global Climate Risk Index 2019**.
- With **rain-fed agriculture** practised in **over 67% of our total crop area**, weather variability can lead to heavy costs, especially for coarse grains (which are mostly grown in rain-fed areas).
- According to one estimate, they may face a **24-58% decline in household income** and **12-33% rise in household poverty** through exacerbated droughts.
- India has **over 120 million hectares suffering from some form of degradation**.
- Rise in average temperatures would significantly impact our kharif crops.
- Any significant decline in summer rains would devastate Indian agriculture. Climate change related phenomena have consequences, especially for marginal farmers.
- They potentially face a huge decline in household income and rise in household poverty through exacerbated droughts.

Way forward:

- Enhancing the resilience of agriculture to cope with the climate change and the climate variability.
- Increasing area under permaculture could result in a total reduction of gigatons of CO₂, from both sequestration and reduced emissions.
- Applying Farm yard Manure, compost or by practising organic farming to improve the soil organic matter which can help in improvement of soil health.
- Develop climate-smart agriculture practices.
- Adoption of Zero Budget Natural Farming (ZBNF) and Organic farming.
- Building on the current crop insurance program, weather-based models and technology need to be used to determine losses and compensate farmers within weeks (Kenya does it in a few days).
- Farmers, especially smallholder farmers, need advance warning of emergent weather conditions at local level.
- Farmers can adapt to climate changes by shifting planting dates and choosing varieties with different growth duration.
- Interventions related to soil health, water harvesting, improved drainage in flood prone area, artificial ground water recharge and water saving irrigation methods.
- An Early warning system should be put in place to monitor changes in pest and disease outbreaks.
- Promoting Drought / temperature tolerant varieties and water saving paddy cultivation methods (System of Rice Intensification (SRI)).



- Investment in R&D is needed to spur innovations in sustainable climate-friendly and climate-proof productivity, and the private sector can help on this.

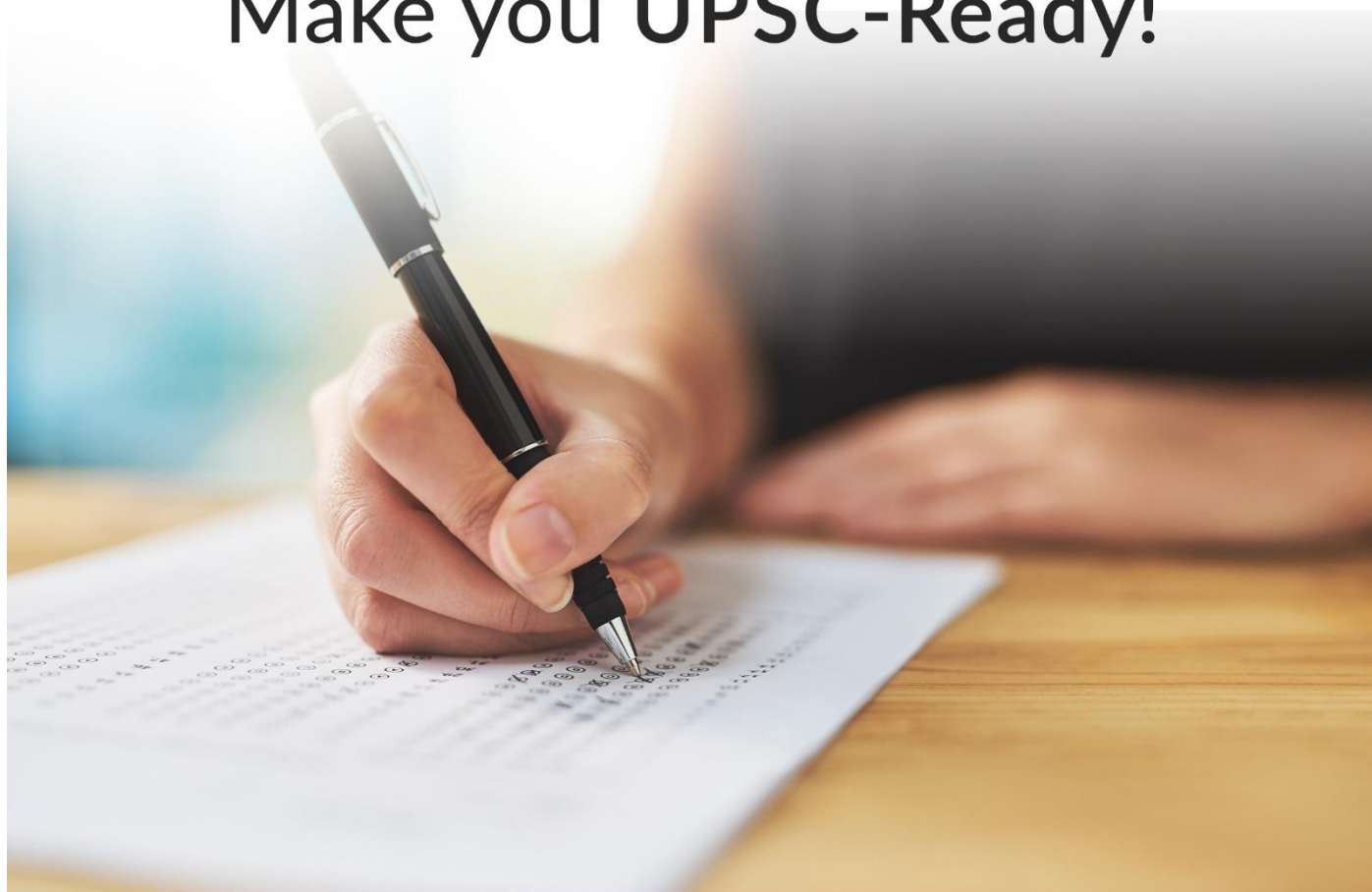


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Q) The Indian fertiliser industry has overlooked the aspects related to environmental pollution, while making improvements in energy efficiency. Critically analyse the statement while suggesting solutions to the problems. (250 words)

Reference

Why this question:

The article captures the pollution caused by the fertiliser industry in detail, it emphasises on the need for a relook at the industry. The industry has been classified under the 'red category' of polluting sectors by the Central Pollution Control Board

Demand of the question:

This question seeks to examine the pollution causing factors of the fertilizer industry

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, one needs to look at the good and bad of the topic and give a fair judgement.

Structure of the answer:

Introduction

Start with brief introduction on the fertilizer industry.

Body

Discussion to the answer must state the factors of pollution that the industry is causing, take cues from the article to discuss various reasons that are causing pollution. Cover multiple aspects and suggest what needs to be done.

Conclusion

Conclude with what needs to be done.

Introduction:

- Indian soils are generally deficient in nitrogen, phosphorus and potassium and do not give high yields. It is, therefore, essential to feed these soils with chemical fertilizers so that their productivity increases. The significant contribution made by the chemical fertilizers can be seen from the impact of the Green Revolution on Indian agriculture. The health and growth of the fertilizer industry is vital for increasing the growth of agricultural sector, to meet the food-grain requirements of increasing population as well as increasing contribution to exports.
- The industry has been classified under the 'red category' of polluting sectors by the Central Pollution Control Board

Body:

Indian Fertiliser industry:

- Fertilizer as an industry is under the control of the Union Government. Urea dominates the sector.
- It is the most produced (86%), the most consumed (74%) and the most imported (52%).
- India's produces about 80 percent of its Urea fertilizer needs.
- And the fertilizer industry has the capacity to indigenously meet 50 percent of the country's phosphatic fertilizers.
- But India still depends heavily on imports for the raw ingredients for its phosphatic and potassium fertilizers.
- The public sector undertakings are playing a dominant role in manufacturing chemical fertilizers.
- At present, there are 11 public sector undertakings under the administrative control of Department of Fertilizers.
- A number of private companies are also engaged in manufacturing fertilizers. E.g.: IEL (Kanpur), SRC (Kota), D.C.M. (Delhi) etc.

Factors of pollution that the industry is causing:

- A study conducted by the Centre for Science and Environment, a New Delhi-based non-profit, under its Green Rating Project (GRP) revealed the dismal state of pollution control by industries.
- Out of 52 per cent plants, assessed in the study, 12 plants received directions or show cause and even closure notices for water pollution and air pollution or solid waste mismanagement.
- There are relaxed norms for the discharge of untreated or partially treated industrial wastewater and emission of air pollutants.
- Management of solid wastes, particularly hazardous waste was also found to be poor.



- Pollutant standards for the sector were revised in 2017, but are still relaxed compared to international standards.
- Nitrogen becomes a pollutant when it escapes into the environment and reacts with other organic compounds.
- Nitrogen compounds running off farmland have led to water pollution problems around the world, while nitrogen emissions from industry, agriculture and vehicles make a big contribution to air pollution.
- While most plants are meeting the particulate matter (PM) standards, inefficient air pollution control devices or improper fuel combustion within the systems have led to high emission levels at some plants.
- There is also no regulation in India for parameters like emissions of gaseous ammonia from urea manufacturing,

Measures needed:

- There is an urgent need for stricter compliance check systems and enforcement of norms.
- The momentum for these changes has to be created through robust policies.
- State Governments and Central Government need to work in tandem to encourage farmers for ecological farming.
- Farmers have to be educated and taught to change their cropping pattern and move to multiple cropping.
- Use of bio-fertilisers should be encouraged.
- There is also a need to shift from fossil fuel based to renewable energy based fertiliser plants.

Conclusion:

- Fertilisers are inevitable in our food security and economy as almost half of population is dependent on it.
- The need of the hour is for better regulation and sustainable ways of producing and using fertilisers which is in sync with SDG 12 (Responsible Consumption and Production).

Q) What do you understand by desertification? List down its causes. Also evaluate the role played by United Nations Convention to Combat Desertification (UNCCD) so far in addressing the concerns posed by desertification world across. (250 words)

Reference

Why this question:

World Day to Combat Desertification and Drought was observed on June 17, 2019 with the theme “Let’s grow the future together”. Thus, it is important for us to evaluate the theme.

Key demand of the question:

One has to discuss in detail the concept of Desertification, causes and the concerns posed by it and then evaluate the role played by UNCCD in addressing these concerns so far.

Directive:

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:

Begin with brief introduction on the background of the question.

Body:

Discussion should include the following:

- Desertification according to United Nations: Desertification is the degradation of land in arid, semi-arid and dry sub-humid areas. Desertification does not refer to the expansion of existing deserts.
- Causes: It is caused primarily by human activities and climatic variations. It occurs because dryland ecosystems, which cover over one third of the world’s land area, are extremely vulnerable to overexploitation and inappropriate land use.
- Global scenario: According to United Nations, every year, the world loses 24 billion tons of fertile soil and dryland degradation reduces national domestic product in developing countries by up to 8 % annually.
- Goal 15 of the 2030 Agenda for Sustainable Development states our resolve to halt and reverse land degradation.
- Suggest solutions – as to what needs to be done?



Conclusion:

Conclude with way forward.

Introduction:

- Desertification is **the degradation of land in arid, semi-arid and dry sub-humid areas. It is caused primarily by human activities and climatic variations.** Desertification does not refer to the expansion of existing deserts.
- It occurs because dryland ecosystems, which cover over one-third of the world's land area, are extremely vulnerable to **overexploitation and inappropriate land use. Poverty, political instability, deforestation, overgrazing and bad irrigation practices** can all undermine the productivity of the land

Body:

Main reasons that cause desertification in India are:

- **Water erosion (10.98 per cent).**
- **Wind erosion (5.55 per cent).**
- **Human-made/settlements (0.69 per cent).**
- **Vegetation degradation (8.91 per cent).**
- **Salinity (1.12 per cent).**
- **Others (2.07 per cent).**

United Nations Convention to Combat Desertification (UNCCD) was established in 1994, the sole legally binding international agreement linking environment and development to sustainable land management. The Convention addresses specifically the arid, semi-arid and dry sub-humid areas, known as the drylands, where some of the most vulnerable ecosystems and peoples can be found.

UNCCD Estimate of Desertification:

- **Land & Drought:**
 - By 2025, 1.8 billion people will experience absolute water scarcity, and 2/3 of the world will be living under water-stressed conditions.
 - A complex and slowly encroaching natural hazard with significant and pervasive socio-economic and environmental impacts to cause more deaths and displace more people than any other natural disaster.
 - India has witnessed increase in the level of desertification in 26 of 29 states between 2003-05 and 2011-13, according to the State of India's Environment (SoE) 2019 in Figures.
- **Land & Human Security:**
 - By 2045 some 135 million people may be displaced as a result of desertification.
 - Achieving land degradation neutrality -by rehabilitating already degraded land, scaling up sustainable land management and accelerating restoration initiatives- is a pathway to greater resilience and security for all.
- **Land & Climate:**
 - Restoring the soils of degraded ecosystems has the potential to store up to 3 billion tons of carbon annually.
 - The land use sector represents almost 25% of total global emissions. Its rehabilitation and sustainable management are critical to combating climate change.

Measures undertaken by UNCCD:

- **UNCCD 2018-2030 Strategic Framework:** It is the most comprehensive global commitment to achieve Land Degradation Neutrality (LDN) in order to restore the productivity of vast expanses of degraded land, improve the livelihoods of more than 1.3 billion people, and reduce the impacts of drought on vulnerable populations to build.
- The Convention's 197 parties work together to improve the living conditions for people in drylands, to maintain and restore land and soil productivity, and to mitigate the effects of drought.
- The UNCCD is particularly committed to a bottom-up approach, encouraging the participation of local people in combating desertification and land degradation.
- The UNCCD secretariat facilitates cooperation between developed and developing countries, particularly around knowledge and technology transfer for sustainable land management.
- As the dynamics of land, climate and biodiversity are intimately connected, to meet these complex challenges with an integrated approach and the best possible use of natural resources.
- The UNCCD collaborates closely with the other two Rio Conventions: The Convention on Biological Diversity (CBD) and The United Nations Framework Convention on Climate Change (UNFCCC).

**Way forward:**

- Setting up of an Intergovernmental Panel on Land and Soil will be very helpful in speeding up efforts to check desertification.
- Developing countries need to integrate their poverty eradication programmes with strategies to fight desertification.
- Lessons from the world:
 - In Africa, several countries have come together to form a 12,000 sq.km “great green wall” extending from Senegal to Djibouti with the participation of local communities.
 - People’s participation is crucial in reclaiming lands. China’s “great green wall” project is on a massive scale and is now starting to show results.
- The techniques include agro-forestry and farmer-managed natural regeneration. Small community initiatives like
 - Closure of degraded lands for grazing
 - Curtailing farming
 - Growing fast-growing plants
 - Raising tall trees that serve as a barrier against winds and sandstorms are very effective.
- National governments could consider building large green belts, prioritise forestry programmes and launch projects of fixing and stabilising sands.

Conclusion:

- The desertification is being accentuated by climate change. Thus, a comprehensive sustainable developmental approach is needed by the countries.

Q) Discuss the possible relationship between climate change and hunger. (250 words)Reference**Why this question:**

The question is to analyse the impact of climate change on global hunger

Key demand of the question:

One has to analyse how and why climate Change Is Driving Global Hunger.

Directive:

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:**

Begin with brief introduction on what you understand by Hunger.

Body:

Discussion should include the following:

- Quote reports like – Climate Change is among the leading causes of rising global hunger according to a new report released by the UN’s Food and Agricultural Organization (FAO).
- Extreme weather events, land degradation and desertification, water scarcity and rising sea levels all indicate how climate change already undermines global efforts to eradicate hunger.
- Explain how the two things are inter related, what are the dependencies? What needs to be done?

Conclusion:

Conclude that If we are to achieve a world without hunger and malnutrition in all its forms by 2030, it is imperative that we accelerate and scale up actions to strengthen the resilience and adaptive capacity of food systems and people’s livelihoods in response to climate variability and extremes.

Introduction:

- According to the United Nations’ annual food security report 2018, World hunger has risen for a third consecutive year. Climate Change is among the leading causes of rising global hunger. 60 million people are facing a food crisis but the public has not heard about it.
- The 2015/16 ‘super El Niño’, combined with climate change, brought severe droughts and flooding to people in the Horn of Africa, Southern Africa, Central America, Asia, the Caribbean and the Pacific. 31.1m people are currently food insecure in the Horn of Africa.

**Body:****Relationship between climate change and hunger:**

- Agriculture is one of the industries most exposed and vulnerable to climate change.
- Crops and livestock are extremely sensitive to temperature and precipitation.
- A late spring frost can be devastating, and a heat wave during the flowering stage can result in sharply reduced yields.
- With climate change, people face shortage of water and food, resulting in increased competition to access these basic necessities. This increases the chances of the intensification of existing conflicts and also creates new ones.
- In the Democratic Republic of Congo, shifts in the timing and patterns of rainfall have led to lower food production and greater competition on arable land, increasing ethnic tensions and conflicts in the country. Such conflicts affect the poor the most, and further lead to an increase in poverty and displacement, pushing people into a vicious trap.
- Frequent floods and droughts caused by climate change lead to food shortages and rise in food prices. This causes hunger and malnutrition, the effects of which are felt most strongly by the poor.
- Floods and droughts brought on by climate change threaten food production and supply. As a result, the price of food increases, and access becomes more and more limited, putting many at higher risk of hunger.
- Rising sea levels, extreme weather events and prolonged drought force millions of people to move away from home every year in search of food, water and jobs.
- Gradual changes brought on by deforestation, overgrazing and drought slowly transform pastures to dust, destroy crops and kill livestock, effectively challenging the livelihoods of millions of farmers
- Meat consumption alone accounts for an estimated 22 percent of global water use, and this need will increase in a hotter world.
- Even seemingly disparate factors like international trade are affected by climate change, with serious ramifications for food security

India's risk profile due to climate change:

- India ranks fifth globally for the losses it has experienced due to climate change
- Around 800 million people in the country live in villages and depend on agriculture and natural resources for their livelihoods. With at least 50% of the farmlands in the country being rain-fed, changes in the pattern of the monsoons will affect their livelihoods the most.
- There has been a recorded decline in monsoon rainfall levels since 1950. And it is suspected that 2°C rise in world's temperature will make India's monsoon even more unpredictable. Change in Monsoon could flood certain states in India, while some other states may witness frequent droughts.
- Climate change will make the existing problems of poverty, malnutrition, and farmer suicides worse.
- Due to climate change, 15% of India's groundwater resources are damaged, and falling water table is suspected to deal a severe blow in progress of agriculture.
- Rising sea-level and surges of storm would also impact agriculture, degrade groundwater quality, increasing the risk of contamination in water, and giving rise to diarrhoea and cholera.
- Also rising carbon dioxide levels due to global warming is suspected to shrink down the amount of protein in crops like rice and wheat, which are primary food source for majority of the population in the drought leaving populations at risk of malnutrition, low immunity and raising the risk of diseases affecting the population severely.
- There will be manifold increase in the severe heatwave frequency and affecting the crops, food delivery system etc.

Way forward:

- **Curbing food loss, improving nutrition and promoting sustainable production systems** must be prioritized.
- Food-producing nations will need creative policies and new technologies to meet these challenges successfully.
- The efforts should include reforestation which would reduce the impact of extreme events fuelled by warming of the surrounding oceans and neighbouring lands.
- To limit global warming, countries will have to **change policies in sectors like land, energy, industry, buildings, transport, and urban development.**
- **Limiting global warming to 1.5 degree** compared with 2 degree would reduce challenging impacts on ecosystems, human health and well-being, making it easier to achieve the United Nations Sustainable Development Goals.



- When historical knowledge no longer works, farmers must rely on other sources of information, such as **meteorologists, agronomists and other scientists**, as well as the **development of new sustainable technologies**.
- **Public funding for agricultural research and development** must be increased and the developed countries must transfer the technology to the developing and low-income nations.
- **Precision agriculture** can leverage computers, global positioning systems, geographic information systems and sensors to provide the data necessary to give each tiny parcel of land on a field exactly the inputs it needs.
- And a resurgent interest in the use of the time-honoured technology of **cover crops** may mitigate climate change impacts.
- **Nanotechnologies** can also help improve how fertilizers and pesticides are released. By putting chemical inputs into tiny capsules or in gels, it is possible to control when and how these inputs are released to make them more effective, and at the same time reduce chemical emissions and runoff.

Conclusion:

- In short, **agriculture is the “Goldilocks industry”** — the weather should not be too hot or too cold, and rainfall must be “just right.” Producing enough food for everyone in the world depends heavily on climate.
- This means that it will be impossible to curb hunger without preparing for and adapting to climate change.
- People must wield their social power to encourage mitigation of climate change and promote investments in technologies for adaptation. We need everyone at the table contributing to a food-secure future.

Q) The Indian Forest Act, 1927 (IFA), is proposed to be amended. Can we conclude that the forest sector in India is waking up to the much-needed reforms ? Critically analyse. (250 words)

[Livemint](#)

Why this question:

The question is to discuss the recent forest reforms that are being brought to the table. And evaluate if the reforms are in the right direction.

Key demand of the question:

Evaluate the current forestry reforms being taken by the government and critically analyse if they are able to meet the intent.

Directive:

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, one needs to look at the good and bad of the topic and give a fair judgement.

Structure of the answer:

Introduction:

Begin with brief introduction on details of the Indian Forest Act.

Body:

Discussion should include the following:

Take cues from the article and discuss how IFA was a tool for a colonial takeover of India’s forests. The IFA created two main legal categories of forests—reserved forest (RF) and protected forest (PF)—and empowered the forest departments (FDs) to take over, manage and protect them. It was implicitly for timber and softwood production.

Then move on to discuss what are the issues of continuing the same system? What are we failing in?

Explain the relevance and coming of Forest Rights Act of 2006.

What are the current concerns associated to it?

Conclusion:

Conclude by reasserting the need for better reforms and need for the right direction.

Introduction:

- The Ministry of Environment, Forest and Climate Change (MoEF&CC) has finalized the first draft of the process of “comprehensively amending” the backbone of forest governance in India—the Indian Forest Act, 1927 (IFA).
- The Indian Forest Act was enacted in 1927 to ‘consolidate the law related to forest, the transit of forest produce, and the duty liable on timber and other forest produce’.

**Body:**

- There has been a severe decline in the forest cover of the country mainly because of large-scale diversion of forest lands for agriculture, diversion for “development” projects and regularisation of encroachments by state governments.

Many reports like the **MB Shah report of 2010** and the **TSR Subramanian report of 2015**, have talked about amending the IFA. Thus, the **IFA amendment Act is a new lease of life** with the **following new provisions**:

- New definitions of Forest and Community in line with changing environmental, socio-economic and political scenario.
- The amendment has increased the focus to conservation, enrichment and sustainable management of forest resources and matters connected therewith to safeguard ecological stability.
- It addresses the concerns related to climate change and international commitments.
- **More Power to forest officers** under Section 66(2) of the Indian Forest (Amendment) Act forest-officer, may if necessary, use firearms for securing of the forest-produce.
- The Union government has proposed that the Centre will be able to intervene in the states on matters of management of forestlands, overruling the states on several counts when it deems fit.
- The amendment introduces a new category of forests — production forest. These will be forests with specific objectives for production of timber, pulp, pulpwood, firewood, non-timber forest produce, medicinal plants or any forest species to increase production in the country for a specified period.
- It provides for empowering the state governments to levy cess upto 10% of value assessed of mining products removed from the forests and water used for irrigation or on industries. The cess shall be used exclusively for reforestation, forest protection and other purposes connected with the tree planting, forest development and conservation.
- The proposed amendments also stated that the state government “may recognise and notify private forest at the request of the owner” if the forest is used primarily for environmental conservation and preservation including, protecting water catchments
- It also defines the procedure to be followed for declaring an area to be a Reserved Forest, a Protected Forest or a Village Forest.
- It defines what a forest offence is, what are the acts prohibited inside a Reserved Forest, and penalties leviable on violation of the provisions of the Act.

However, there are a few concerns with the Draft IFA:

- **Clash with Forest Rights Act:** The exclusion of ‘village forestry’ from the preview of Forest Right Act (forest official supersedes gram sabha) is legally contradictory and would add confusion on the ground
- **Give more power to forest officials:** The draft Bill reinforces the idea of bureaucratic control of forests, providing immunity for actions such as use of firearms by personnel to prevent an offence. Critics argue that this would turn quarter of India’s land into police state.
- **Definition of forest:** Various national and international agencies such as FAO, CBD, UNFCCC and FSI have adopted the definition of forest that account density and area under tree as the basis of definition. While proposed amendment consider only administrative needs and ignores ecological parameters while defining forest.
- **Forced relocation of forest dwellers:** The draft mentions that the state governments could take away the rights of the forest dwellers if the government feels it is not in line with “conservation of the proposed reserved forest” by payment to the people impacted or by the grant of land

Conclusion:

- India’s forests play a key role in moderating the lives of not just the adivasis and other traditional dwellers, but everyone in the subcontinent, through their impact on the climate and monsoons.

Topic: Disaster and disaster management.

Q) What are heat waves and how are they classified ? Discuss the effects of heatwaves on health, environment and economy and suggest how should India be prepared ? (250 words)

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

Why this question:

The Article discusses in what way heat-wave action plans can help city administrations cope with the worst of summer.



Key demand of the question:

The answer must explain what are heat waves, the causes of heatwaves, effect of heatwaves on health, environment and economy. Also one has to elaborate on the steps that are required to be taken in Indian context.

Directive word:

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

Structure of the answer:

Introduction:

Begin with a definition of what you understand by heatwaves.

Body:

The answer must discuss the following:

- Heat wave is considered if maximum temperature of a station reaches at least 40°C or more for Plains, 37°C or more for coastal stations and at least 30°C or more for Hilly regions.
- Discuss the criteria used to declare heat wave.
- Explain the causes and consequences, health impacts of Heat Waves, on economy, environment etc.
- Quote reasons – why India is experiencing more heat waves, what needs to be done?
- Conclude with way forward.

Conclusion:

Conclude with solutions to overcome the challenge.

Introduction:

- Heat wave is a period of abnormally high temperatures, more than the normal maximum temperature that occurs during the pre-monsoon (April to June) summer season.
- According to Indian Meteorological Department, Heat wave is considered if maximum temperature of a station reaches at least 40°C or more for Plains, 37°C or more for coastal stations and at least 30°C or more for Hilly regions.

Body:

Effects:

Social:

- Heatwaves are associated with increased rates of heat stress and heat stroke, worsening heart failure and acute kidney injury from dehydration.
- Children, the elderly and those with pre-existing morbidities are particularly vulnerable.
- Promote the spread of diseases like cholera and dengue fever across endemic areas.
- Increased poverty due to failure of crops and reduced economic activities.

Economic:

- India lost nearly 75 billion hours of labour in 2017 as a result of rising temperatures.
- This made sustained work increasingly difficult and negatively affecting workers' output.
- The agriculture sector experienced the largest increase in labour loss.
- Almost 153 billion hours of labour were lost globally in 2017 due to heat, an increase of 62 billion hours from the year 2000.
- Agriculture sector was more vulnerable compared to the industrial and service sectors because workers there were more likely to be exposed to heat.
- Since 1990, every region of the globe has become steadily more vulnerable to extreme increases of heat.

State actions towards Heat waves assessing their geographic variations:

- Key element of many states response strategy has been enhancing health risk communications on the impact of heat waves and how citizens can take simple steps to reduce their exposure and protect their health.
- **Andhra Pradesh:**
 - Andhra Pradesh has strong inter-agency coordination across multiple departments
 - Andhra Pradesh has also set up 1168 stations approximately one for every hundred square kilometers for weather forecasting and modelling.
 - It has developed a mobile app to disseminate information about heat waves and advice on precautionary steps; the app is available in English and Telugu.
- **Telangana:**
 - Telangana developed one of the first state-wide heat action plans in 2016.



- The state is now integrating the heat action plan with its action plan on climate change.
- The Telangana plan focuses on training district officials and health staff
- **Odisha:**
 - It has declared heat waves as a state specific disaster.
 - It is developing local thresholds and analyzing vulnerability of communities in different parts of the state.
 - Odisha's activities focus on awareness raising, capacity building and training of healthcare staff, interagency coordination, and enabling provision of water for vulnerable communities.
- Various states and municipalities have introduced early warning systems, public awareness campaigns and increased training for medical professionals.
- Ahmedabad, Nagpur and Odisha have made pioneering efforts with respect to heat-health warning systems (HHWS).
- **Ahmedabad Municipal Corporation (AMC)** has adopted a heat action plan which necessitates measures such as building heat shelters, ensuring availability of water and removing neonatal ICU from the top floor of hospitals.
- Such warning systems include providing weather forecasts in advance, issuing warnings to people, providing readiness of emergency response systems, and preparing doctors and health facilities to handle a sudden influx of patients. Warnings facilitate people in taking appropriate actions against heat-related harm.
- Access to cool environments remains the mainstay of preventing heat stress:
 - In rural areas, where electricity access is a challenge, supplementing power supply of primary health centres with solar-based systems should be undertaken. Chhattisgarh, Maharashtra and Tripura have already deployed such systems.

Way forward:

- In 2016, the National Disaster Management Agency prepared guidelines for state governments to formulate action plans for the prevention and management of heat waves, outlining four key strategies:
 - Forecasting heat waves and enabling an early warning system
 - Building capacity of healthcare professionals to deal with heat wave-related emergencies
 - Community outreach through various media
 - Inter-agency cooperation as well as engagement with other civil society organizations in the region.
- Scientific Approach:
 - Climate data from the last 15-20 years can be correlated with the mortality and morbidity data to prepare a heat stress index and city-specific threshold.
 - Vulnerable areas and population could be identified by using GIS and satellite imagery for targeted actions.
- Advance implementation of **local Heat Action Plans**, plus effective inter-agency coordination is a vital response which the government can deploy in order to protect vulnerable groups.
- This will require identification of "**heat hot spots**", analysis of meteorological data and allocation of resources to crisis-prone areas.
- The **India Cooling Action Plan** must emphasize the urgency and need for better planning, zoning and building regulations to prevent Urban Heat Islands.
- **Provision of public messaging** (radio, TV), mobile phone-based text messages, automated phone calls and alerts.
- Promotion of traditional adaptation practices, such as staying indoors and wearing comfortable clothes.
- Popularisation of simple design features such as shaded windows, underground water storage tanks and insulating housing materials.

Q) "Fixing India's water crisis will need saner policies, meticulous strategy and a massive amount of public participation". Critically analyse. (250 words)

[Livemint](https://www.livemint.com)

Why this question:

The article discusses in detail the water woes that are unraveling in many parts of the country.

Key demand of the question:

The answer must address the methods and ways in terms of policies that are must required for addressing the water crisis across the country. One must discuss the need for systematic solutions.

**Directive:**

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, one needs to look at the good and bad of the topic and give a fair judgement.

Structure of the answer:**Introduction:**

Begin with brief introduction on the current water crisis situation of the country.

Body:

- One must quote facts to depict the current water crisis situation facing the country. Studies warn that a seasonal drought is, in fact, a full-blown water crisis, accentuated by poor planning. Groundwater and sand extraction from river beds and basins has turned unsustainable, say many government and independent studies.
- Discuss the causative factors of such drought like conditions.
- What needs to be done at the planning and policy level?
- Take hints from the article, suggest solutions using case studies.

Conclusion:

Conclude with way forward.

Introduction:

- The **NITI Aayog report on Composite Water Management Index (CWMI)** said that India is facing its ‘worst’ water crisis in history. Taps in Shimla went dry in summer of 2018, posing an unprecedented water crisis in the hill town.
- Maharashtra and nearly half the country is facing drought and crippling water scarcity. Rains in 2018 in many parts were below normal with long gaps between rainy days. Our water crisis is turning more structural and stems from mostly man-made factors.

Body:**Current water crisis in India:**

- The annual per capita availability of water continues to decline sharply from about 5,177 cubic metres in 1951 to about 1,720 cubic metres in 2019.
- The NITI Aayog in its report on Composite Water Management Index (2018) has underlined that currently 600 million people face high to extreme water stress.
- Twenty-one cities, including Delhi, Bengaluru, Chennai and Hyderabad will run out of groundwater by 2020, affecting 100 million people.
- The rate of groundwater extraction is so severe that NASA’s findings suggest that India’s water table is declining alarmingly at a rate of about 0.3 metres per year.
- At this rate of depletion, India will have only 22 per cent of the present daily per capita water available in 2050, possibly forcing the country to import water.
- Dug-wells and borewells are constructed with alarming impunity to slide deeper and deeper to suck water from greater depths.
- Water is being diverted from food-crops to cash-crops; livelihoods to lifestyles; rural to urban—mismanagement is a bigger reason for the drought.
- Water shortages are hurting India’s ability to produce power and 40% thermal power plants are in areas facing high water stress, a recent World Resources Institute report says.
- Not only farmers, urban dwellers in cities and towns across India are also staring at a never seen before drinking water scarcity
- Residents in the arid Thar Desert of Rajasthan are spending Rs 2,500 to buy 2,500 litres of water which they share with their cattle.

Causative factors for water crisis:

- A combination of population explosion, unplanned growth of the city and its expansion to some traditional catchment areas (a region from which rainfall flows into a river, lake, or reservoir) have led to a reduction in the natural flow of water, and large-scale deforestation.
- Climate change, leading to much lower precipitation during the winter months. As a result, the natural flow and recharge of water in the region has fallen sharply
- Failure of State governments to check unplanned development and exploitation of water resources. There is no attempt at the central or state levels to manage water quantity and quality



- The vegetation pattern has changed, tree cover is shrinking and unscientific dumping of debris in water streams is rampant.
- The debris blocks the natural course of water bodies.
- Increasing number of tube wells resulting in depletion of groundwater.
- Changes in farming patterns lead to consumption of more water for irrigation and also change the soil profile because of the use of fertilizers
- The states ranked lowest like Uttar Pradesh, Haryana and Jharkhand – are home to almost half of India's population along with the majority of its agricultural produce.
- There is also a **lack of interest in maintaining India's traditional water harvesting structures.**

Measures needed to strengthen water Governance:

- India's priority must be:
 - To make our irrigation and water systems amenable to modern concepts.
 - To complete irrigation and water sector reforms.
 - To implement improved water management, governance and regulation practices.
 - Pricing system for water: For making people use water efficiently
- Deepen our understanding of our water resources and usage and put in place interventions that make our water use efficient and sustainable.
- Augmentation of watersheds that can store more good water, for use in agriculture and to serve habitations.
- Strict pollution control enforcement.
- **Decentralisation of irrigation commands**, offering higher financial flows to well-performing States through a **National Irrigation Management Fund**.
- Groundwater extraction patterns need to be better understood through **robust data collection**.
- Pollution can be curbed by levying suitable costs.
- Poor maintenance of pipelines, consistent leakage and illegal tapping of water are some of the issues that need to be addressed on a war-footing.
- Adopting rainwater harvesting techniques is the need of the hour.
- A legal mandate will work better than just competition and cooperation; it would make governments accountable.
- These forward-looking changes would need revamped national and State institutions, and updated laws.
- Urban India needs to focus on recycling and harvesting water, having better testing and purification facilities and increase public awareness on the need to conserve water.
- Large catchment areas need to be developed around water bodies so that natural recharge of groundwater takes place. A good example is the **Seog catchment area** which has been denoted as a wildlife sanctuary and where no construction is allowed.
- Greywater recycling, a method of recycling wastewater from kitchen sinks, showers and laundry fixtures.
- Greywater recycling helps reduce household water usage by about 50% .
- Comprehensive restructuring of India's Central Ground Water Board and the Central Water Commission in order to create a new 21st Century management authority.
- Right to water should mean a high priority to drinking water.
- This year's World Water Development Report makes it clear that nature-based solutions which are also aligned with the principles and aims of the 2030 Agenda for Sustainable Development can offer answers to our most pressing water-related challenges.

Conclusion:

- There is a need for credible environmental and cumulative impact assessments, genuine public consultation process at multiple stages of planning and project implementation, confidence-inspiring appraisal, which includes the appointment of independent experts, and most crucially, achieving some real monitoring and compliance.
- The **water governance** ought to be made **transparent, accountable and participatory** in every sub-sector, including management of rivers, groundwater, floods, and biodiversity, among others.



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Q) Maharashtra is facing a water emergency of unprecedented proportions, in such conditions analyse how grave the water crisis is and what needs to be done to deal with the problem. (250 words)

Reference

Why this question:

The conversation in the show discusses in detail the water emergency that the State of Maharashtra is facing and highlights the urgency to look into the water crisis the country is witnessing.

Key demand of the question:

The answer must discuss the water crisis in detail and suggest what needs to be done to resolve the situation and address the issue in a sustainable manner.

Directive:

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:

In a few introductory lines discuss the situation of water crisis currently being witnessed across the country.

Body:

In brief discuss the following aspects –

Following years of drought, the rivers' currents have ebbed, water in dams and reservoirs has depleted and over-exploitation of groundwater has raised concerns over the long-term availability of water.

Meanwhile media reports claim IT companies in Chennai are asking employees to work from home. The reason being they don't have water to sustain operations. It has not rained for almost 200 days in the city and Chennai may not get sufficient rain to tide over the water crisis for the next three months. In North India, residents in the arid Thar Desert of Rajasthan are dishing out Rs 2,500 to buy 2,500 litres of water which they share with their cattle.

With the threat of desertification staring Punjab in the face and the state struggling to break away from the 'wheat-paddy' cycle, farmers in the state are quickly adopting a five-decade-old scheme to use 'Underground Pipeline System' for irrigation.

The union government on its part has created a Jal Shakti Ministry under a full-fledged cabinet minister to try and address the water emergency, but a lot more needs to be done.

Thus conclude by analysing how grave the water crisis is and what needs to be done to deal with the problem.

Conclusion:

Conclude with what more needs to be done.

Introduction:

- Maharashtra is facing a water emergency of unprecedented proportions. Following years of drought, the rivers' currents have ebbed, water in dams and reservoirs has depleted and over-exploitation of groundwater has raised concerns over the long-term availability of water. Our water crisis is turning more structural and stems from mostly man-made factors.

Body:

- India receives 4000 bcm rainfall every year. Out of this, 1869 bcm is left after evaporation and the actual availability is 1137 bcm. There is a lot of temporal and spatial variation in the availability of this water. There are water surplus states and water scarce states like Maharashtra (Vidarbha, Beed), Karnataka, Tamil Nadu, Rajasthan, parts of Gujarat, Punjab and Haryana.

Issues with long term projects:

- Interlinking of rivers is a long-term project. It is almost 20 years now and the groundwork has not started for Ken-Betwa project. There is a lot of political opposition and there are ecological concerns as well. Half of the Panna tiger Reserve will be submerged.
- There are floods in Brahmaputra river at the time of monsoon but water is required in Assam during dry months.
- There is the problem of storage and transfer of water as well.

Major issues:

- Delay in monsoon and change in pattern.
- Management of both supply side and demand side of water.



- India's availability of water at present is 1700 cubic ft per person, which was 5000 cubic ft per person once upon a time.
- Unprecedented heat waves, which can become more persistent with climate change.
- Less pre monsoon rain.
- Reservoir levels are going down.
- 91 reservoirs in India are at 19% of their life storage.

Measures needed:

- India's priority must be:
 - To make our irrigation and water systems amenable to modern concepts.
 - To complete irrigation and water sector reforms.
 - To implement improved water management, governance and regulation practices.
 - Pricing system for water: For making people use water efficiently
- Centre, states, people and all stakeholders need to take action in this regard.
- Vigorous programmes on water efficiency are required like energy efficiency.
- There is an urgent need for coordination among users for aquifers. There should be laws and contracts for sharing of aquifers.
- Groundwater mapping has started recently in India.
- There should be a River Basin Authority for sharing information among states as most of the rivers in India pass through different states focusing on conservation.
- At the village level, there can be decentralized management of water at community level.
- Charging money for efficient use of water (as in case of electricity). For example- Water ATMS at Marathwada provide water @25 paisa per litre a day.
- Changing the cropping pattern, crop diversification and encouraging water use efficiency in agriculture by moving towards food crops from cash crops.
- Coordinated efforts among states for management of ground water at a localized level.
- Encouraging rain water harvesting, check dams
- Comprehensive restructuring of India's Central Ground Water Board and the Central Water Commission in order to create a new 21st Century management authority.
- Right to water should mean a high priority to drinking water
- India has so far seen the water sector in terms of irrigation projects or water schemes. We need to balance between our water-needs and that of the river itself.

Conclusion:

- Fixing India's structural water crisis will need a balanced combination of saner policies, meticulous strategy, and a massive amount of public participation.

Q) India faces a water crisis acute enough to cause popular unrest as it slowly assumes calamitous proportions. Discuss the causes that have led to such conditions and what needs to be done to address the situation on ground? (250 words)

[Livemint](#)

Why this question:

The article captures the water crisis currently that is prevailing in India. It points to the alarming crisis that may soon become a catastrophe.

Demand of the question:

The answer must discuss the underlying causes for such a crisis and analyse as to what needs to be done.

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

Start with few facts explaining the water crisis situation in the country. India has only 4% of the planet's fresh-water for 16% of its population.

Body

One can have the following points in the answer:



Explain the crisis situation first, draw a map of India to depict the water crisis situation across the country.

Explain the root cause of such situation – falling Groundwater levels, India is the world's biggest groundwater extractor, All manner of structures have encroached upon lakes and rivers with impunity, while industrial waste and sewage inflows render various water bodies toxic. The problem is compounded by the large-scale adoption of thermocol and plastic plates and glasses even in the countryside, the stuff of non-biodegradable waste that ends up killing rural pools of water that have traditionally served entire villages etc.

Discuss what needs to be done to prevent the situation turning into a popular catastrophe.

Conclusion

Conclude with suggesting solutions, increased water harvesting techniques, scientific interventions for conservation of water is the need of the hour.

Introduction:

- The **NITI Aayog report on Composite Water Management Index (CWMI)** said that India is facing its 'worst' water crisis in history. Taps in Shimla went dry in summer of 2018, posing an unprecedented water crisis in the hill town.
- According to a forecast by the Asian Development Bank, India will have a water deficit of 50% by 2030. Recent studies also ranked Chennai and Delhi at the top of the 27 most vulnerable Asian cities in terms of low per-day water availability Mumbai and Kolkata follow close.

Body:

Current water crisis in India:

- India has only 4% of the planet's fresh-water for 16% of its population.
- The annual per capita availability of water continues to decline sharply from about 5,177 cubic metres in 1951 to about 1,720 cubic metres in 2019.
- The NITI Aayog in its report on Composite Water Management Index (2018) has underlined that currently 600 million people face high to extreme water stress.
- Twenty-one cities, including Delhi, Bengaluru, Chennai and Hyderabad will run out of groundwater by 2020, affecting 100 million people.
- The rate of groundwater extraction is so severe that NASA's findings suggest that India's water table is declining alarmingly at a rate of about 0.3 metres per year.
- At this rate of depletion, India will have only 22 per cent of the present daily per capita water available in 2050, possibly forcing the country to import water.

Causative factors for water crisis:

- A combination of population explosion, unplanned growth of the city and its expansion to some traditional catchment areas (a region from which rainfall flows into a river, lake, or reservoir) have led to a reduction in the natural flow of water, and large-scale deforestation.
- Climate change, leading to much lower precipitation during the winter months. As a result, the natural flow and recharge of water in the region has fallen sharply
- Failure of State governments to check unplanned development and exploitation of water resources. There is no attempt at the central or state levels to manage water quantity and quality
- The vegetation pattern has changed, tree cover is shrinking and unscientific dumping of debris in water streams is rampant.
- The debris blocks the natural course of water bodies.
- Increasing number of tube wells resulting in depletion of groundwater.
- Changes in farming patterns lead to consumption of more water for irrigation and also change the soil profile because of the use of fertilizers
- The states ranked lowest like Uttar Pradesh, Haryana and Jharkhand – are home to almost half of India's population along with the majority of its agricultural produce.
- There is also a **lack of interest in maintaining India's traditional water harvesting structures.**

Measures needed:

- India's priority must be:
 - To make our irrigation and water systems amenable to modern concepts.
 - To complete irrigation and water sector reforms.
 - To implement improved water management, governance and regulation practices.
 - Pricing system for water: For making people use water efficiently



- Deepen our understanding of our water resources and usage and put in place interventions that make our water use efficient and sustainable.
- Augmentation of watersheds that can store more good water, for use in agriculture and to serve habitations.
- Strict pollution control enforcement.
- **Decentralisation of irrigation commands**, offering higher financial flows to well-performing States through a **National Irrigation Management Fund**.
- Groundwater extraction patterns need to be better understood through **robust data collection**.
- Pollution can be curbed by levying suitable costs.
- Poor maintenance of pipelines, consistent leakage and illegal tapping of water are some of the issues that need to be addressed on a war-footing.
- Adopting rainwater harvesting techniques is the need of the hour.
- A legal mandate will work better than just competition and cooperation; it would make governments accountable.
- These forward-looking changes would need revamped national and State institutions, and updated laws.
- Urban India needs to focus on recycling and harvesting water, having better testing and purification facilities and increase public awareness on the need to conserve water.
- Large catchment areas need to be developed around water bodies so that natural recharge of groundwater takes place. A good example is the **Seog catchment area** which has been denoted as a wildlife sanctuary and where no construction is allowed.
- Greywater recycling, a method of recycling wastewater from kitchen sinks, showers and laundry fixtures.
- Greywater recycling helps reduce household water usage by about 50% .
- This year's World Water Development Report makes it clear that nature-based solutions which are also aligned with the principles and aims of the 2030 Agenda for Sustainable Development can offer answers to our most pressing water-related challenges.

Conclusion:

- There is a need for credible environmental and cumulative impact assessments, genuine public consultation process at multiple stages of planning and project implementation, confidence-inspiring appraisal, which includes the appointment of independent experts, and most crucially, achieving some real monitoring and compliance.
- The **water governance** ought to be made **transparent, accountable and participatory** in every sub-sector, including management of rivers, groundwater, floods, and biodiversity, among others.

Topic: Money laundering

Q) How does globalization impact money laundering ? Examine the recent policy efforts by the Government of India to address such problems. (250 words)

Reference

Why this question:

The question is to analyse the impact of globalisation on money laundering.

Demand of the question:

The answer must discuss the impact of globalization on money laundering.

Directive word:

Examine – When asked to ‘Examine’, we have to look into the topic (content words) in detail, inspect it, investigate it and establish the key facts and issues related to the topic in question. While doing so we should explain why these facts and issues are important and their implications.

Structure of the answer:

Introduction

Start with brief description of the question's context.

Body

One can have the following points in the answer:

- Start the answer by drawing the link between money laundering and globalization.
- Briefly explain how globalization impacts money laundering.
- Examine the recent policy efforts taken by the government.

Conclusion

Conclude with way forward.

**Introduction:**

- Money laundering is a process where the proceeds of crime are transformed into apparently legitimate money or other assets. It is the processing of criminal proceeds to disguise its illegal origin. In simple words, it can be defined as the act of making money that comes from one source to look like it comes from another source. Money laundering is a single process however, its cycle can be broken down into three distinct stages namely, placement stage, layering stage and integration stage.

Body:**Impacts of globalization on money laundering:**

- Rapid developments in financial information, technology and communication allow money to move anywhere in the world with speed and ease.
- This makes the task of combating money-laundering more urgent than ever.
- The deeper “dirty money” gets into the international banking system, the more difficult it is to identify its origin.
- Because of the clandestine nature of money-laundering, it is difficult to estimate the total amount of money that goes through the laundry cycle.
- There have been a number of developments in the international financial system during recent decades that have made the three F’s-finding, freezing and forfeiting of criminally derived income and assets-all the more difficult.
- These are the “dollarization” (i.e. the use of the United States dollar in transactions) of black markets, the general trend towards financial deregulation, the progress of the Euromarket and the proliferation of financial secrecy havens.
- Fuelled by advances in technology and communications, the financial infrastructure has developed into a perpetually operating global system in which “megabyte money” (i.e. money in the form of symbols on computer screens) can move anywhere in the world with speed and ease.

Efforts of Government of India to address money laundering:

- In India, before the enactment of Prevention of Money Laundering Act, 2002 (PMLA) the major statutes that incorporated measures to address the problem of money laundering were:

PMLA Act:

- It prescribes obligation of banking companies, financial institutions and intermediaries for verification and maintenance of records of the identity of all its clients and also of all transactions and for furnishing information of such transactions in prescribed form to the Financial Intelligence Unit-India (FIU-IND).
- It empowers the Director of FIU-IND to impose fine on banking company, financial institution or intermediary if they or any of its officers fails to comply with the provisions of the Act as indicated above.
- PMLA envisages setting up of an Adjudicating Authority to exercise jurisdiction, power and authority conferred by it essentially to confirm attachment or order confiscation of attached properties.

The Black money (undisclosed foreign income and assets) and Imposition of Tax Act, 2015:

- To deal with the menace of the black money existing in the form of undisclosed foreign income and assets by setting out the procedure for dealing with such income and assets.

Benami Transactions (Prohibition) Amendment Bill, 2015:

- It aims to expand the definition of Benami Transactions and specifies the penalty to be imposed on a person entering into a Benami transaction.

Institutional framework:**Enforcement directorate:**

- PMLA empowers certain officers of the Directorate of Enforcement to carry out investigations in cases involving offence of money laundering and also to attach the property involved in money laundering.

Financial Intelligence Unit:

- It was established in India in 2004 as the central national agency responsible for receiving, processing, analyzing and disseminating information relating to suspect financial transactions.
- FIU-IND is also responsible for coordinating and strengthening efforts of national and international intelligence, investigation and enforcement agencies in pursuing the global efforts against money laundering and related crimes.
- FIU-IND is an independent body reporting directly to the Economic Intelligence Council (EIC) headed by the Finance Minister.

**Way forward:**

- Make common people more aware about the problem- The poor and illiterate people, instead of going through lengthy paper work transactions in Banks, prefer the Hawala system which needs to be stopped.
- Fulfilling the purpose of KYC Norms by doing proper KYC.
- Establishment of comprehensive enforcement agencies
- Promote cashless digital transaction

Topic : Cyber security; Role of media and social networking sites in internal security challenges.

Q) Historically, privacy was almost implicit, because it was hard to find and gather information. But in the digital world, we need to have more explicit rules. Discuss the need to control social media and the associated challenges. (250 words)

Livemint

Why this question:

The article discusses the recent US government's decision to press ahead with an antitrust probe against Big Tech firms has drawn the clout of these companies into the spotlight again. Investigators will put Facebook, Amazon, Apple and Google to scrutiny in an effort to check if they have abused their market dominance to stifle competition and hurt consumers.

Key demand of the question:

The answer must evaluate the need for controlling social media and the methods to ensure privacy concerns are addressed. One must explain how things have evolved historically with coming of the social media.

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:**

In a few introductory lines highlight the role of social media, the context of security involved along with it.

Body:

In brief discuss –

- Discuss how Social media is omnipresent in our lives and has a huge bearing on society and individuals.
- Explain that about 1.49 billion people on average log onto Facebook daily; every second, on average, around 6,000 tweets are tweeted on Twitter; and since its inception, over 40 billion photographs have been posted on Instagram. This is evidence of the huge presence of social media in our lives.
- Discuss the need for putting a control on the social media, why is it necessary and urgent.
- Explain what are the challenges involved , how to overcome them.

Conclusion:

Conclude with what needs to be done, suggest way forward.

Introduction:

- Social media plays an integral role in our lives today and has a huge bearing on society and individuals. Social media has revolutionized the way people communicate and socialize on the web. There is a positive effect on business, politics, socialization as well as some negative effects such as cyber-bullying, privacy, and fake news.

Body:

Recent developments:

- The US government's decision to press ahead with an antitrust probe against Big Tech firms has drawn the clout of these companies into the spotlight again.
- Investigators will put Facebook, Amazon, Apple and Google to scrutiny in an effort to check if they have abused their market dominance to stifle competition and hurt consumers.
- If such behaviour is proven, it would be unsettling, to say the least, given the widening use of social media and the privacy concerns it has thrown up.

**Need to control social media due to rising privacy concerns:**

- **Legitimate vs fake information:**
 - Challenge is how you permit what is considered legitimate content and information, and at the same time disallow the plethora of fake information as well as threats and abuse conveyed through these platforms.
 - There are questions raised whether to ban the medium or platform or content.
 - Rumours triggering lynchings and riots, data snooping etc.
- **Data theft and identity crisis:**
 - Data of millions are taken and used when only 270,000 people knowingly or unknowingly gave consent.
 - Individuals often share their data without being aware of it or understanding the implications of privacy terms and conditions.
 - Individuals do not have much control over the data they shared and personal data is considered as the new oil.
 - Individual users are increasingly viewed as legitimate targets for mining personal and metadata.
 - Such data can provide an intimate psychological profile including ideological preferences that together help campaign managers target communications and forecast voter behaviour.
- **Personal information collected:**
 - Fundamental business model of social media companies like Facebook poses some serious concerns.
 - Their goal is to collect as much personal information on individuals as possible and then use this information to sell highly targeted advertising to companies.
 - Worldwide there is very little understanding of what exactly they collected, little regulation and little known about the consequences on democracy.
 - This level of data collection represents the concentration of enormous power in the hands of a single corporation. The Cambridge Analytica scandal has highlighted how this power can be used by a small group of people with an agenda to foster polarisation, radicalisation and undermine democratic elections.
- **Other privacy issues:**
 - The tax authorities, for instance, have an eye out for lifestyles that may be disproportionate to declared sources of income.
 - Earlier this week, the US began asking visa applicants to submit details of their social media accounts.
 - The trolling of women has brought to the fore the disturbing reality of online violence and abuse women face in India.
 - Social media psychological profiles are being generated by tools designed to aid recruitment. Official scans by state agencies are on the rise, too.
- **Currently very difficult to control because:**
 - The number of users using social media platforms and internet are ever increasing and volume of traffic is huge.
 - The monopolistic tendency of a social media platform is all the more pronounced for the simple reason that its utility depends on connectivity: People have virtually no choice but to use the network that links everybody else they'd like to interact with.

Measures needed:

- Companies claim that they are merely distributing information. But the fact that they are near-monopoly distributors makes them public utilities and should subject them to more stringent regulation, aimed at preserving competition, innovation, and fair and open access.
- Recent laws directed at social media have that changing in Germany, social networks could pay up to \$60 million in fines if hate speech isn't removed within 24 hours.
- Social networks need to enhance their own governance, continue to refine the algorithms, use more "friction" like warnings and notifications for suspicious content expand human oversight, adjust advertising, and continue to share knowledge with other networks to reach those goals.
- India needs to have a legal framework for data protection. It will create a vital and necessary framework against which rights and responsibilities can be articulated, and digressions thereof evaluated.
- A proper data protection law with an effective enforcement mechanism would ensure recognition for India as a trustworthy global destination for data-based businesses and privacy-conscious consumers while also protecting the Right to Privacy of the people in India.



- Cyber law provisions need to be revised as the current approach of the Indian law is very narrow.
- International agreements form an important node in a web of solutions needed to address security and the rule of law in cyberspace. Given India's vision of a Digital India and considering the surge in cybercrime, it would be beneficial for India to join Budapest Convention
- Experts have pointed to the importance of aspects such as following basic cyber hygiene and a periodic review of the security facets of one's profile on various web platforms, especially on social media, where users tend to share personal information.
- When there are no legitimate security or public interest reasons, users should have the right to have their data destroyed.

Conclusion:

- Social media is a tool for empowerment, especially for a country like India where 70% of the population is yet to get online and leverage the opportunities it has to offer.
- While social media is definitely facing the privacy challenges, it is also enabling communities to access their rights and voice their opinion. Thus, there is a need to regulate it to get the best out of it for socio-economic development of society.

Q) Do you think the Indian government's intent towards data protection lie in favour data localisation? Critically analyse. (250 words)

[Indianexpress](#)

Why this question:

The article discusses why the Indian government intends in favor of data localization.

Key demand of the question:

One has to discuss the concept of data localization; Why government wants this? Concerns expressed by stakeholders and possible solutions.

Directive:

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, one needs to look at the good and bad of the topic and give a fair judgement.

Structure of the answer:

Introduction:

Begin with the concept of data localisation.

Body:

Explain the following points:

- What is the issue associated?
- What does data localization mean? – is a sensitive issue the world over and more so in India, given that this is a country of 1.3 billion people with over 1 billion mobile users. With technology developing rapidly, more and more devices becoming smarter and the Internet of Things taking over, a genuine concern around leakage of private data has gained ground.
- Explain why data localization is necessary for India? What are the policies that imply data localization?
- Discuss the concerns and challenges.

Conclusion:

Conclude with the fact that there is an urgent need to have an integrated, long-term strategy for policy creation for data localization.

Introduction:

- Data localisation refers to the process of storing data within the borders of a particular country where the data was generated.
- India's recent drafts and statements have strong signals for data localisation, which means that data of Indians, even if collected by an American company, must be stored and processed in India.
- Worldwide, the data flow debate is playing out at the World Trade Organisation (WTO) and G20.

**Body:****Importance of Data localization for India:**

- For securing citizen's data, data privacy, data sovereignty, national security, and economic development of the country.
- Much of the data from online sales, on ecommerce platforms is likely to be hosted and stored in US data firms.
- The extensive data collection by technology companies, has allowed them to process and monetise Indian users' data outside the country.
- To curtail the perils of unregulated and arbitrary use of personal data
- With the advent of cloud computing, Indian users' data is outside the country's boundaries, leading to a conflict of jurisdiction in case of any dispute.
- Data is a digital transactions footprint. During war or hostilities, data centres could be switched off. Such scenarios are pushing countries towards local infrastructure.

Yes, Data localization is needed in India due to:

- Data localisation will help Indian law enforcement agencies access data.
- RBI circular says that, it is important to have unfettered supervisory access to data stored in India.
- Localisation will help law enforcement access the data. Currently, India has to use "mutual legal assistance treaties" (MLAT) with the US to get the data of Indians that are controlled by American companies.
- By requiring a copy of the data to be stored in India (data mirroring), the government hopes to have more direct control over these companies, including the option to levy more taxes on them
- Recently lynching across the country were linked to WhatsApp rumours and in this context, localisation of data assumes significance.
- It gives security against foreign attacks and surveillance.
- Domestic companies support data localisation citing examples of China and Russia.
- Data is the new oil, data is strategic and foreign entities could cripple India in event of war or sanctions.
- India's data localisation push can give rise to new business opportunity.
- India is an ideal location for lower cost of operations and availability of quality talent.
- National wealth creation relies on in-house data storage.
- It champions domestic innovation.
- Massive amounts of data generated by cities can be used to improve infrastructure and transport systems as Singapore has done.

No, data localization is not needed due to:

- It will create domino effect of protectionist policy and other countries may also follow it. This leads to fragmentation of internet.
- It may affect India's young start-ups that are attempting global growth.
- It may affect big firms like TCS and Wipro because they are processing foreign data in India.
- Even if the data is stored in the country, encryption keys may remain out of reach of national agencies.
- It can act as "barriers" to expansion of services in India, impacting not only consumers but also growth of Indian payments market.
- Infrastructure in India for efficient data collection and management is lacking
- Others caution that these laws could bring increased state surveillance, like India's draft intermediary rules that would require WhatsApp to change its design to proactively filter messages.

Way forward:

- There is an urgent need to have an integrated, long-term strategy for policy creation for data localisation.
- Devising an optimal regulatory and legislative framework for data processors and data centres operating in the country.
- Adequate infrastructure in terms of energy, real estate, and internet connectivity also needs to be made available for India to become a global hub for data centres.
- Adequate attention needs to be given to the interests of India's Information Technology Enabled Services (ITeS) and Business Process Outsourcing (BPO) industries, which are thriving on cross border data flow
- Data needs to be shared with start-ups so that they can have a level playing field in offering innovative services with large and often global data companies.



Topic: Security challenges and their management in border areas - linkages of organized crime with terrorism.

Q) The geo-strategic importance of the Indian Ocean Region (IOR) has seen a gradual increase in the recent past. Under such conditions discuss the significance of Indian Navy's Presence and Surveillance Missions in the region and critical role played by them. (250 words)

The hindu

Why this question:

Question is about discussing the crucial role played by the Indian Navy in the Indian ocean region. Recently in an expansion of its Mission Based Deployments (MBD) in the Indian Ocean Region (IOR), the Navy deployed its P-8I long-range maritime surveillance aircraft for anti-piracy sorties from Salalah in Oman to patrol the Gulf of Aden.

Key demand of the question:

The answer must provide for a detailed narration of the geostrategic importance that the Indian ocean region holds for India and the countries around the region. One has to explain in detail the

Directive:

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:

write a few introductory lines the current efforts being made by the Indian Navy in the IOR.

Body:

Have the following points in the answer:

- The geo-strategic importance of the Indian Ocean Region (IOR) has seen a gradual increase in the recent past. Indian Navy regularly deploys ships for Presence and Surveillance Missions (PSM), off critical choke points / sea lanes in the IOR.
- Since August 2017, Indian Navy deployments in the IOR have been further structured under the Mission Based Deployment (MBD) concept.
- Under MBD concept, In addition to the anti-piracy deployment, IN ships were also Mission Deployed for :
 1. Operation 'GULFDEP' in the Persian Gulf,
 2. Operation 'CENTDEP' in the central Indian Ocean Region,
 3. Operation 'NORDEP' in the northern Bay of Bengal and
 4. Operation 'MALDEP' in the Andaman Sea and approaches to the Malacca Strait.

Discuss other Naval operations that were significant in the IOR.

Conclusion –

Conclude with significance.

Introduction:

- The Indian Navy recently deployed its P8I surveillance planes for carrying out anti-piracy patrol sorties from Salalah (in Oman) to patrol the Gulf of Aden and other piracy prone areas. The deployment is an expansion of Navy's Mission Based Deployments (MBD) in the Indian Ocean Region (IOR), to keep the region safe.

Body:

Geo-strategic importance of the Indian Ocean Region (IOR):

- Indian Ocean has gained tremendous importance over the years and has now become the most concerted area where global economic activity conjoined political interests.
- The combination of economic growth and slowdown, military expansion, increasing demand for natural resources, demographics combined with the geo-political situation, increased presence of nuclear capable actors and variances in regional structures of governance, highlights the geo-political significance of this area.
- It is a home to world's busiest waterways and chokepoints such as the Suez Canal, Bab al Mandeb, Strait of Hormuz and the Strait of Malacca. All these chokepoints and waterways are highly important for the rising nations of the world.
- More than half the world's armed conflicts are presently located in the Indian Ocean region.



- It is also home to
 - Continually evolving strategic developments including the competing rises of China and India
 - Potential nuclear confrontation between India and Pakistan
 - The US interventions in Iraq and Afghanistan
 - Islamist terrorism
 - Growing incidence of piracy in and around the Horn of Africa
- There has been a gradual to an accelerated expansion of maritime forces and their capabilities in the region.
- The growing presence of **extra regional powers and nuclear capable nations** has further altered the existing security framework. This is affecting the existing military balance and the impending imbalance could create a new architecture that could affect the prevailing security scenario.
- **Naval bases:**
 - US uses the island of Diego Garcia as a major air-naval base and logistics hub for its Indian Ocean operations.
 - France, meanwhile maintains significant presence in the north and southwest Indian Ocean quadrants, with naval bases in Djibouti, Reunion, and Abu Dhabi.
- **India:**
 - India imports about 70 percent of its oil through the Indian Ocean Region to its various ports. As a consequence, it has been enhancing its strategic influence through the use of soft power, by becoming a major foreign investor in regional mining, oil, gas, and infrastructure projects.
 - In addition, India has aggressively expanded its naval presence reportedly to include the establishment of listening posts in the Seychelles, Madagascar and Mauritius
- Its governance and security are under constant threat of being undermined, whether by non-state actors such as pirates, smugglers, and terrorists, or by furtive naval competition between states.

Mission-Based Deployments (MBD) philosophy was adopted by Navy in August 2017. This ensures availability of warships in 7-8 critical areas of the Indian Ocean Region on a nearly continuous basis to provide rapid response to any contingency. Under the MBD concept, the Navy now maintains a ship at every choke point in the IOR at any point of time.

The reasons behind the deployment of warships are:

- The continued prevalence of piracy
- Illegal fishing
- Arms smuggling and other such nefarious activities directly impinge on the maritime security of India in particular and the region at large.
- Natural disasters also ravage the region frequently.
- Increase in the presence of 'Extra-Regional Forces'.

Some of the missions:

- Operation 'GULFDEP' in the Persian Gulf,
- Operation 'CENTDEP' in the central Indian Ocean Region,
- Operation 'NORDEP' in the northern Bay of Bengal and
- Operation 'MALDEP' in the Andaman Sea and approaches to the Malacca Strait.

As part of expanding engagement maritime engagement, India has taken the following steps:

- India has stepped up its cooperation with Indian Ocean littoral states and maritime neighbours, as part of expanding its maritime engagement.
- Under the 'Neighbourhood First' policy, the Navy undertakes Joint Exclusive Economic Zone (EEZ) surveillance with Maldives, Seychelles and Mauritius and Coordinated Patrols (CORPAT) with Bangladesh, Myanmar, Thailand and Indonesia.
- Search and rescue and capability-enhancement activities have also emerged as major areas.
- Besides escorting Indian flagged vessels, ships of other countries have also been provided protection

Conclusion:

- Indian Ocean is an "**ocean of economic opportunities**". The growing interests of major powers (US, UK, Russia, France and Japan) in the region, and the many Chinese infrastructure projects in the region create an imperative for India to actively limit the military maritime activity of external powers in the region.
- India should use the multilateral route to create a consensus for peaceful and sustainable use of the Indian Ocean and its resources.



Q) Discuss the need for Defense reforms in India. In what way do you think the coming of Minister for security in the Cabinet going to prove to be a gamechanger ? (250 words)

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

Why this question:

The article discusses about forging national security, what way Defense reforms should be a priority, the most vital being the creation of a Chief of Defense Staff.

Key demand of the question:

The answer must first discuss the current conditions of defense system in India, need for reforms and how the coming of minister of security is a positive step in the right direction.

Directive:

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:

In a few lines discuss the importance of national security.

Body:

The answer must discuss the following:

Explain the issues around India's national security and defense, the measures taken to address them ranging from setting up of Defense Planning Committee (DPC) to creation of national security strategy, international defense engagement strategy.

Then move on to discuss the concerns in dealing with security issues.

Bring out the positives of having created a dedicated minister for security, its significance.

Conclusion:

Conclude with way forward as to how the country is in need of defense reforms and this is a right step in the right direction.

Introduction:

- The state of India's national security and defence is getting worse than before and are in a dire need of reform. With the China-Pakistan Economic Corridor rapidly taking shape, the China-Pakistan embrace has got much tighter as has the convergence between China and Russia.
- China has intensified military engagements with several South Asian and Indian Ocean region states. Keeping in light all these there is a great necessity for India to reform its defence forces.

Body:

The need for defence reforms in India is due to the following challenges:

- **Military planning:**
 - It is hamstrung by lack of a clearly articulated and integrated military strategy. In such a situation, the three wings of the military are left to devise their own strategies and military philosophies, which could end up being at cross purposes with each other.
 - The reasons that can be ascribed to this state of affairs is the absence of military expertise at the apex level of national security and defence matters, exacerbated by **non-institution of the appointment of Chief of Defence Staff** to coordinate defence policy and strategy more meaningfully.
- **Centralisation:**
 - There are concerns that appointing NSA to SPG would lead to further centralisation of decision making.
 - The post of the NSA is also not a legally-mandated one and he has no parliamentary accountability.
- **Line of Control:**
 - Overall violence in Jammu and Kashmir and ceasefire violations on the Line of Control reached a 14-year high in 2017, and did not subside in 2018.
 - There are far more attacks on security forces and security installations in J&K, and militant recruitments and violence against civilians in the State are rising at an alarming rate.
- **Neighbourhood policy:**
 - Though the government claims that the surgical strikes of 2016 gave a befitting response to Pakistan, it hardly made any significant gains in reality.



- A report of the Parliamentary Standing Committee on External Affairs recently revealed that the Chinese forces are back in the Doklam plateau with more force.
- The report goes on to fault the government for continuing with its conventionally deferential foreign policy towards China.
- India's neighbourhood policy holds a clear absence of vision on how to balance, engage and work with the many great powers in the regional and the broader international scene.
- **Defence preparedness:**
 - India spends close to \$50 billion annually on defence and yet might still be ill-equipped to fight the wars of the modern age, especially in the neighbourhood.
 - India also suffers from almost non-functional higher defence organisation and the defence policy doesn't hold any political oversight or vision.
- **Defence management:**
 - There is little conversation between the armed forces and the political class, and even lesser conversation among the various arms of the forces.
 - Our doctrines, command structures, force deployments and defence acquisition continue as though each arm is going to fight a future war on its own.
- **Institutional lacuna:**
 - In India, talk of appointing a Chief of Defence Staff (CDS) has died down and the key post of military adviser in the National Security Council Secretariat (NSCS) remains vacant.
 - The NSC almost never meets and the National Security Advisory Board, initially set up to seek 'outside expertise' on strategic matters, has become a space for retired officials.
- **Modernisation:**
 - The state of modernisation and domestic defence industry in the country are in a sorry state.
 - Under the present system, where the ratio of revenue to capital expenditure in defence is roughly 65:35%, any serious attempt at modernisation would be impossible.

Minister of Security:

- The prime minister has added a sixth member to his Cabinet Committee on Security (CCS) known as "Minister for Security".
- The CCS currently comprises ministers of home, defence, finance, external affairs and Security, headed by Prime Minister.
- The new minister is granted a full-fledged cabinet minister rank.

Significance of Minister of Security:

- It reduces the burden of Minister of Defence to an extent.
- It increases the accountability
- The present NSA's credentials and expertise in the fields of internal security and intelligence as well as the affairs of our "near abroad" are well-known and his elevation could be the key to ensuring that focus is retained on national security.

Conclusion:

- There is clearly a need to view national security through a narrower prism and evolve a less ambitious doctrine that focuses on matters directly related to defence and security.
- It must provide strategic guidance to the military within clearly defined national aims and objectives.