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SIMPLIFYING IAS EXAM PREPARATION

## **SECURE SYNOPSIS**

### **MAINS 2019**

**GS-III**

## **SEPTEMBER 2019**



**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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Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment.

Discuss the current economic slowdown being witnessed by the country. What are the underlying causes and what measures are needed to be taken to bounce back on the right growth trajectory? Explain.

Indianexpress

**Why this question:**

*The article reflects and highlights the current conditions of fall in GDP numbers of the country and brings out in detail the causes and consequences.*

**Key demand of the question:**

*Explain the causes of the slowdown of the economy and discuss what measures are to be taken to overcome the issue.*

**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.

**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:**

*In brief discuss the current scenario of the economy.*

**Body:**

*The latest GDP growth of 5 % is the lowest in six years with the previous low recorded at 4.3 % in March 2013. It is also lower than 5.8 % GDP growth in the March quarter in 2018-19. This is the second straight quarter when the quarterly GDP growth was lower than 6 %. The growth has slowed down in five out of eight sectors, reflecting the widespread weakness in the overall economy.*

*Explain then the factors responsible for the slowdown – domestic and global.*

*Discuss what measures must be taken to resolve in short term as well as long term.*

**Conclusion:**

*Conclude with way forward.*

In economics, a recession is a business cycle contraction when there is a general decline in economic activity. Recessions generally occur when there is a widespread drop in spending. In India there has been recently, a steady decline in the economic momentum in India, and growth expectations for the current year have already fallen from 7.4% to 7%, thus making it important to find the reasons affecting our economic growth.

**Underlying causes –**

- **shortage of money** - While currency in circulation is not a problem, the money that much of the formal economy uses for transactions, and sees as bank deposits is not finding its way to the market.
- **Lacunae with financial systems** - Our Financial system which converts base money to M3 is not functioning smoothly. When banks give new loans, they “create” money. When the financial system is not functioning effectively, this process of money creation slows down, failing the money multiplier effect. This can be seen in the **failure of banking sectors to extend loans to credit seekers** in the era of **increasing NPAs**.



- Recent **failure of Non-Banking Finance Companies (NBFCs)** which had stepped in to support credit growth has resulted in restricted growth to ensure survival, as a result of which system-wide credit growth has slowed sharply.
- **Govt. Failure to address the issues** - Government has also failed in addressing these issues as there is a general apprehension of running into the risk of another build-up of bad loans.
- There has been a reported **drop in the households' financial savings to GDP ratio in 2017 to 9.4%** highlighting the fact that there aren't enough savings available for both the government and the private sector to be funded adequately, which further impedes the growth.
- There are several other challenges such as **a weak and ailing real-estate market, problems in agriculture, worrying levels of external dependence in India's energy ecosystem, crumbling municipal infrastructure, and stagnating capital flows**, among several others.

#### Measures required to stunt the slowdown-

- The govt. should **address the growth slowdown concerns**; free up funds for investment and spending by banks, housing finance companies and MSMEs; and importantly, undo some controversial proposals, in the budget and outside it, which were affecting sentiment in the markets and the corporate sector.
- **Promote the ease of doing business** and even the ease of living for ordinary citizens.
- The **issues surrounding auto sector must be addressed** - the accelerated depreciation of 15% (in addition to the existing 15%) for all vehicles acquired till March 31, 2020 and the deferment of the proposed increase in registration fee for new vehicles to June 2020 are positive measures that will boost sentiment and, it is to be hoped, translate into demand.
- Strong **push** to be given for **repo rate linked loan products**.
- Some **welcome initiatives already in effect** – roll-back of the capital gains tax imposed in the budget on foreign portfolio investors, withdrawal of angel tax on start-ups and the promise that non-compliance with corporate social responsibility (CSR) norms will be decriminalised show a government that is willing to listen to feedback from the ground etc.

Thus it is clear that the economy needs to be addressed based on the ideology of reform, perform and transform in totality to overcome the current challenges of slowdown.

Deep Ocean mining for rare minerals still remains an untapped sector in India; in such a context discuss the relevance of project Samudrayaan and its significance.

Livemint

**Why this question:**

*The question intends to examine the prospects of rare minerals from deep ocean and the significance of Samudrayaan.*

**Key demand of the question:**

*One should discuss in detail the relevance of Samudrayaan project and potential of deep ocean mining to 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:**

*In brief explain what rare earth minerals are.*

#### **Body:**

*First state the context – The ‘Samudrayaan’ is a part of the Ministry of Earth Sciences’ pilot project for deep ocean mining for rare minerals. The project proposes to send a submersible vehicle with three persons to a depth of about 6000 meters to carry out deep underwater studies.*

*Explain what can be the positive consequences of such initiatives, why is it so significant to the Indian economy.*

#### **Conclusion:**

*Conclude with importance of Marine studies and exploration to Indian economy.*

**Deep sea mining** is a mineral retrieval process that takes place on the ocean floor. It is envisaged that 10% of recovery of that large reserve can meet the energy requirement of India for the next 100 years. It has been estimated that 380 million metric tonnes of polymetallic nodules are available at the bottom of the seas in the Central Indian Ocean.

#### **Significance and potential of Deep ocean mining:**

- The floor of the world’s seas is scattered with vast beds of black potato-shaped polymetallic nodules comprising copper, nickel, cobalt, manganese, iron and rare earth elements. These natural minerals are key to making modern gadgets, from smartphones and laptops to pacemakers, hybrid cars and solar panels.
- As expanding technology and infrastructure fuel global demand for these resources whose supply is dwindling fast onshore more and more countries are eyeing the ocean. Once thought to be too costly and difficult, industrial-scale sea mining could begin as early as 2019.

#### **Why India needs seabed minerals?**

- India is most interested in copper, nickel and cobalt, as it ramps up clean power generation.
- Cobalt, also produced in Democratic Republic of Congo, is used to make batteries that can store energy from renewable sources, including solar and wind.
- These metals are not widely available in India, so they have strategic importance.
- India’s goal is to become self-reliant in the minerals, and it is “not in a race with anybody”.

#### **Relevance of project Samudrayaan –**

Samudrayaan is a pilot project of the Ministry of Earth Sciences for deep ocean mining for rare minerals. It proposes to send men into the deep sea in a submersible vehicle for ocean studies. The project is expected to become a reality by 2021-22. The project has been undertaken by the National Institute of Ocean Technology (NIOT). If the ‘Samudrayaan’ project is successful, India will join the league of developed nations in the exploration of minerals from oceans.

Thus India could be the first developing country to undertake such a project and tap the untapped.

**Does the pay-out of ₹1.76 lakh crore to the union government damage the credibility of the Reserve Bank of India as an independent central bank? Critically analyse.**

[The hindu](#)



**Why this question:**

The question is amidst the recent controversies of payout of ₹1.76 lakh crore to the government by the RBI in accordance with the recommendations of Bimal Jalan committee.

**Key demand of the question:**

The answer must address as to in what way the move somewhere has made the RBI lose its credibility yet once again.

**Directive:**

**Critically analyze** – When asked to analyse, 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 brief narrate the recent happenings between RBI and the government.

**Body:**

Explain What is the issue around RBI payouts this cycle of the year, why and in what way is it different. What is the controversy around the transfer? Explain how RBI earns money in a variety of ways.

Then discuss in what way such move has diluted the powers of RBI.

**Conclusion:**

Conclude with positives and negatives of the move.

Recently, the Reserve Bank of India (RBI) central board **decided to transfer ₹1.76 lakh crore to the government** (including a sum of ₹52,637 crore from its contingency reserve), a move that is likely to **address the Central government's precarious fiscal situation**.

The transfer amount included the payment of dividend worth ₹1.23 lakh crore, and funds from its reserves, as identified under a **new economic capital framework (ECF) adopted by the RBI board**. The RBI had formed a **committee chaired by former RBI Governor Bimal Jalan to review its ECF** last year.

What is the issue around RBI payouts this cycle of the year?

- The RBI's transfer of funds to the government per se is nothing new. **The amount of funds** being transferred by the central bank to the government **this year is much higher than earlier — 146.8% more than what it had paid out last year**, when it transferred ₹•50,000 crore as dividend.
- The massive payout has **raised concerns** that the **government may be using money from the RBI to meet its urgent spending needs**, thus effectively turning the central bank into a banker for the government. Central banks such as the RBI, however, are supposed to be independent from all forms of government influence.
- In July, the **government amended the Finance Bill** to ensure that the **Securities and Exchange Board of India (SEBI) transferred surplus funds** in its custody over to the government.
- It is a common view that the move to get the RBI to let go of a portion of its accumulated reserve as part of a **wider campaign by the government to strip the powers of various independent regulatory bodies**.





### The current relationship between RBI and the Government-

The government **has been criticized** for taking steps since last year **to progressively dilute the powers of the RBI**. The government had tried to convince the central bank to part with more than ₹3 lakh crore from its reserves last year. The **government appointed a committee headed by Mr. Jalan Bimal to overhaul the economic capital framework**.

### Impact of the fund transfers-

#### Negative impacts-

- The primary impact of the fund transfer between the RBI and the Government is **the damage that it does to the credibility of the RBI as an independent central bank**.
- The transfer of surplus reserves to the government is **in effect a forced injection of extra liquidity into the economy**.
- The increased demand to meet the government's fiscal needs will thus **compromise the RBI's ability** to fulfill its primary mandate — **to preserve the value of the rupee by reining in inflation**, by retaining full and final **control over the supply of rupees in the wider economy**.

#### Positive impacts-

- The government is **expected to achieve its 3% fiscal deficit** target this year with the help of the funds it has received from the RBI.
- The fresh funds will also **help the government to spend more on any fiscal stimulus** plan that it may decide to implement in order to tackle the slowdown in the economy.
- The transfer of money from the vaults of the RBI to fund government spending **will increase the amount of money supply in the economy**, thus exerting an upward pressure on prices.
- The RBI's transfer of surplus funds to the government could thus **effectively turn into a monetary stimulus for the economy** which has been slowing down for several consecutive quarters now.

Government is planning to replace fossil fuel dominated vehicles fleet by electric vehicles till 2030. In this context, discuss the advantages and challenges involved in achieving it.

[downtoearth](https://www.insightsias.com/downtoearth)

#### **Why this question:**

*The article explains the future of electric cars and the switch over to the non-fossil fuel based industry of automobiles.*

#### **Key demand of the question:**

*One must explain the shift and justify with advantages and also quote the possible challenges that would be faced.*

#### **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 brief narrate the current policy measure being taken aggressively to switch over to electric cars in India.*

**Body:**

*Explain the recent initiatives in this direction first.*

*Back the initiative with the possible advantages it carries with it.*

*Explain the issues and concerns involved.*

*Suggest solutions to address the imbalance that might get created due to this sudden transitional change.*

**Conclusion:**

*Conclude with way forward.*

To enhance National fuel efficiency, provide affordable and environment friendly transportation India has aimed to achieve 100% electrification of road transport vehicles by 2030. National electric mobility plan 2020 is one step in this direction. It has ambitious target of 6 to 7 billion sales of hybrid and electric vehicle by 2020, FAME India scheme has been launched under this plan to achieve the goal.

**Why zero emissions vehicles make sense in India?**

India is desperate to curb air pollution, strengthen energy security and mitigate climate impacts. Electric vehicles (EVs) provide these co-benefits. Official estimates show that India with ambitious EVs can save about 64 per cent of energy demand for road transport, 37 per cent of carbon emissions by 2030 and save \$60 billion in diesel and petrol costs by 2030.

An initiative by the NITI Aayog, the Federation of Indian Chambers of Commerce and Industry and Rocky Mountain Institute estimates that with 100 per cent electrification, India can save 20 lakh crore and 1 gigatonne of CO2 emissions.

There are worries that while fully battery-operated electric vehicles have zero tailpipe emissions on road, their life cycle emissions depends on source of power generation—coal being the dirtiest compared to hydro and renewable energy. But life cycle emissions intensity of electric vehicles can reduce substantially with more renewable energy infusion as per India's post-2020 climate action plans. The energy source of electricity can change flexibly if renewable energy expands. About 15 per cent of India's power is from hydro while renewables can expand to meet the target of 175 GW by 2022.

Moreover, centralized energy generation to power vehicles opens up better opportunity for pollution control at the source than decentralised emissions control of numerous tailpipes of combustion engines. Delhi-based non-profit Centre for Science and Environment estimates that if all the vehicles (except trucks) were to run on electricity by 2030, the electricity consumed will be about 110 Terawatt-hour or about 5 per cent of the total electricity demand of India in 2030 as projected by 2017 report of NITI Aayog. Likewise, the European Union estimates that EVs will consume 9-10 per cent of their total electricity demand by 2050, when 80 per cent of vehicles can be electric.

**Advantage of 100% electrification**

- Fuel security - India's dependence on imported oil will reduce energy demand by transport sector will be 64% less.
- Curbing air pollution - burning of fossil fuels releases poisonous gases like NOx and SOx. 100% electrification dependence on fossil fuel for transportation will be zero



- Reduces health risk - air pollution causes many non-communicable diseases. This can be avoided with the use of electrical vehicles
- Mitigate climate change - electrification will reduce the carbon footprint of transport sector. Hence help in getting to the emission target for mitigating climate change it can reduce CO2 emission by 37%.
- Job creation - use of electrical vehicle will cause new to Enterprise to come up it will create new jobs
- Implementation of self-driving cars - electrical vehicle is best suited for the concept of self-driving Cars.
- Inspiration for budding engineers - electric vehicle is a new dimension in transport sector it has potential to attract innovative minds

### Challenges

- The time limit for or achieving the target seems very difficult - according to Society of Indian automobile manufacturer (SIAM) only 40% electric vehicle sale is possible by 2030 hundred percent can be achieved by 2047
- No penetration of public charging infrastructure
- On adoption of electrical vehicles problem of e-waste management may aggravate. Large number of batteries will get defunct every years
- Current market of internal combustion engine vehicle will be affected and cause millions to lose their job
- To make electrical vehicle really environment friendly shift to renewable energy is prerequisite
- The major limitation for battery operated electrical vehicle is speed and mileage. Therefore advancement in battery technology is also required to be done in parallel with the adoption of electrical vehicle.
- Example thermal battery has higher power density than that of lithium ion battery but presently only Lithium ion batteries are being used in electrical vehicles

### Conclusion

Present requirement to mitigate climate change SDG 7 SDG 13, UNFCCC demands of deep emission cuts on an unprecedented level. Government of India's target of 100% electrification is in line with that but the target has disruptive effect on current automobile industry. Therefore multipoint approached is required to achieve the goal with complete automobile industry in mind.

India's record in promoting occupational and industrial safety remains weak even with years of robust economic growth. In this context, discuss the key provisions of the Occupational Safety, Health and Working Conditions Code, 2019. To what extent, it deprives the basic rights of workers in Industrial ecosystem?

[The hindu](#)



Occupational safety refers mainly to health safety and welfare of the people at work. Status of occupational safety in India has not been robust in preceding years.

Every year 48000 fatal accidents occur in India. Only 20% working population was covered under any occupational safety regulation. For instance fire crackers Factory at Batle Punjab claimed 23 lives this year; Sivakashi factory explosion - 2012, 40 died and 70 injured.

#### **Reason for weak record in occupational safety**

- **High competition in market** - to make more profit Industries tends to do cost cutting which impacts occupational safety at workplace.
- **Large availability of cheap workforce** - due to high unemployment people get ready to compromise on their safety in order to get a job.
- **Lack of coverage** - 90% of the workforce in India is under informal sector and majority of employer in informal sector are not covered under occupational safety regulation.
- **Lack of awareness** - employed tend to ignore operational safety at workplace and concentrate more on completing the target

Therefore to enhance the operational safety in India, government has passed operational safety health and working condition code 2019 which combines 13 different labour laws and regulation regarding operational safety and health at workplace in the country.

#### **What is the Code for?**

- A healthy workforce would be more productive and the occurrence of fewer accidents and mishaps at work would be economically beneficial.
- So, safety, health, welfare and improved working conditions are pre-requisite for wellbeing of the worker and the country's economic growth.
- With this in mind, the Code repeals and replaces 13 labour laws relating to safety, health and working conditions.
- These include the Factories Act, 1948, the Mines Act, 1952, and the Contract Labour (Regulation and Abolition) Act, 1970.
- The Code enhances the ambit of provisions from existing about 9 major sectors to all establishments having 10 or more employees.
- It does not apply to apprentices.
- Further, it makes special provisions for certain types of establishments and classes of employees, such as factories, mines, and building and construction workers.

#### **Key Provisions of the Code**

- **Relevant authorities** - All establishments covered by the Code must be registered with registering officers.
- **Further**, Inspector-cum-facilitators may inquire into accidents, and conduct inspections of establishments.





- Both these authorities are appointed by the central or state government.
- Additionally, the government may require certain establishments to set up safety committees comprising representatives of employers and workers.
- Advisory Bodies - The central and state governments will set up Occupational Safety and Health Advisory Boards at the national and state level, respectively.
- These Boards will advise the central and state governments on the standards, rules, and regulations to be framed under the Code.
- Duties of employers - The Code specifies several duties of employers which include -
  - providing a workplace that is free from hazards that may cause injury or diseases
  - providing free annual health examinations to employees, as prescribed
- In case of an accident at the workplace that leads to death or serious bodily injury of an employee, the employer must inform the relevant authorities.
- Rights and duties of employees - Duties of employees under the Code include -
  - taking care of their own health and safety
  - complying with the specified safety and health standards
  - reporting unsafe situations to the inspector
- Every employee will have the right to obtain from the employer information related to safety and health standards.
- Working Hours - Work hours for different classes of establishment and employees will be provided as per the rules prescribed by the central or state government.
- For overtime work, the worker must be paid twice the rate of daily wages.
- Female workers, with their consent, may work past 7pm and before 6am, if approved by the central or state government.
- Leave - No employee may work for more than 6 days a week.
- However, exceptions may be provided for motor transport workers.
- Workers must receive paid annual leave for at least one in 20 days of the period spent on duty.
- For sales promotion employees, medical leave must be provided for at least one-eighteenth of the period of service.
- During medical leave, the worker must be paid half his daily wages.
- Working conditions and welfare facilities - The employer is required to provide a hygienic work environment.
- These include ventilation, comfortable temperature and humidity, sufficient space, clean drinking water, and latrine and urinal accommodations.



- Other welfare facilities may be provided as per standards prescribed by the central government.
- These facilities may include separate bathing places and locker rooms for male, female and transgender employees, canteens, first aid boxes, and crèches.
- Offences and penalties - An offence that leads to the death of an employee will be punishable with imprisonment of up to 2 years, or a fine up to Rs. 5 lakh, or both.
- Further, courts may direct that at least 50% of such fine be given as compensation to the heirs of the victim.
- For any other violation where the penalty is not specified, the employer will be penalised with a fine between 2 and 3 lakh rupees.
- If an employee violates provisions of the Code, s/he will be subject to a fine of up to Rs 10,000.

#### **Positives**

- It increased the Ambit of application of occupational safety regulations by including migrant workers, electronic media etc. under it.
- It reduced the threshold for its application to 10 workers.
- It enabled employing women in night shifts.
- Rationalize the compliance mechanism with organization now required to obtain only one license.

#### **Negatives**

- Formation of safety committee and appointment of safety officer the letter in the case of establishment with 500 employees are at the state's discretion.
- Maximum working hour's fixation is left to government to decide which was earlier fixed at 8 hours a day.
- Maximum permissible limit of working condition at hazardous place is also left at the mercy of government.
- No special provision regarding transgender employees.
- Equal pay for equal work finds no explicit mention.

#### **Way forward**

- Maximum working hours and limits for working condition should not be left at the discretion of the government it should be aligned with best International practices.
- Implementation of management information system MIS should be made mandatory for hazardous industries.
- The standards of occupational safety and health should be quantified.
- Time to time inspection by third party should be made necessary so that there is no deviation from safety standards.



## Conclusion

With the ultimate aim of extending the safety and healthy working conditions to all workforce of the country, the Code enhances the ambit of provisions of safety, health, welfare and working conditions from existing about 9 major sectors to all establishments having 10 or more employees.

It is evident that the Occupational Safety, Health and Working Conditions has some unique new initiatives for both workers and employers.

It promotes health, safety, welfare and better working conditions of workforce by enhancing the ambit of a dynamic legislation as compared to the existing sectoral approach limited to few sectors.

Besides, it also drastically rationalizes the compliance mechanism with one license, one registration and one return for the establishments under the ambit of the Code thereby saving resources and efforts of the employers.

Thus, it balances the requirements of worker and employer and is beneficial to both the constituents of the world of work.

Government has hiked ethanol procurement price for blending with petrol, allowed conversion of old sugar into ethanol. How is the move expected to address problems of the Sugarcane growers in the country? Discuss.

[Indianexpress](#)

**Why this question:**

*The government approved an increase in the price of ethanol to be procured by public sector oil marketing companies (OMCs) from sugar mills for blending with petrol for the 2019-20. The Cabinet Committee on Economic Affairs (CCEA) also allowed conversion of old sugar into ethanol, which again is expected to help mills deal with the current overproduction in the sweetener and make timely payments to farmers for the cane delivered by them.*

**Key demand of the question:**

*The answer should explain the effect of recent initiative taken by the govt. to address the sugar woes 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 brief explain the recent initiatives taken by the govt. to address the sugarcane woes of the country.*

**Body:**

*What is ethanol and how do mills produce it?*

*How is using ethanol becoming a solution? Given the surplus sugar production in the country, the government has allowed mills to produce ethanol from molasses and directly from sugarcane juice.*

*Explain that since the country is producing too much sugar and is importing oil, the ethanol-blending programme is beneficial both for mills and for the country's balance of payments.*

**Conclusion:**

*Conclude with way ahead.*

The **government approved an increase in the price of ethanol** to be procured by public sector oil marketing companies (OMCs) from sugar mills for blending with petrol for the 2019-20. The Cabinet Committee on Economic Affairs (CCEA) also **allowed conversion of old sugar into ethanol**, which



again is expected to help mills deal with the current overproduction in the sweetener and make timely payments to farmers for the cane delivered by them.

What is ethanol and how do mills produce it?

- **Ethanol is basically alcohol of 99%-plus purity**, which can be used for blending with petrol.
- The normal rectified spirit used for potable purposes has only 95% alcohol content.
- Both ethanol (also called anhydrous alcohol) and rectified spirit are produced mainly from molasses, a byproduct of sugar manufacture.
- From **one ton of cane, mills can produce 115 kg of sugar (at 11.5% recovery) and 45 kg of molasses (18 kg TFS) that gives 10.8 litres of ethanol.**
- But rather than produce sugar, **mills can also ferment the entire cane.** In that event, they would end up making 84 litres of ethanol and zero kg of sugar.

How is using ethanol becoming a solution?

- Given the surplus sugar production in the country, the government has allowed **mills to produce ethanol from molasses and directly from sugarcane juice.**
- CCEA approved even **use of sugar and sugar syrup for production of ethanol**; mills can simply add these to the molasses mother liquor for further fermentation.
- Currently, **ex-factory prices of sugar** are ruling at around **Rs 32 per kg.**
- But if it were to convert the entire cane juice into 84 liters of ethanol, **the gross prices will be at around 59.48/litre.**
- This is a huge incentive to produce ethanol. This has been additionally facilitated by the **government mandating 10% blending of petrol with ethanol.**
- If mills are able to **divert more of cane juice for ethanol**, it would mean **producing less sugar.**
- Since the country is **producing too much sugar** and is **importing oil**, the ethanol-blending programme is **beneficial both for mills and for the country's balance of payments.**

Way ahead-

- Mills are expected to close the 2018-19 sugar season (October-September) with **all-time-high stocks of 136 lakh tonnes (lt)**, which is equivalent to **six months of domestic consumption.**
- As of now, the sugar mills **have outstanding cane dues of over Rs 10,000 crore**, of which Rs 7,000 crore-plus is in UP alone.
- These will **mount further as crushing for the 2019-20 season begins** in a month's time.

Ethanol is the only **real savior** under the circumstances — both for mills and cane growers.

**What do the bank mergers mean for the banking sector? Explain the connection between bank merger and economic growth of the country.**

*The hindu*



**Why this question:**

Finance Minister Nirmala Sitharaman recently announced that 10 banks owned by the Government of India will be merged into four larger banks; thus the total number of state owned banks in the country will have come down from 27 (in 2017) to 12.

**Key demand of the question:**

One must explain what are bank mergers, their significance and effect on Indian economy.

**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:**

In brief narrate the background of the question.

**Body:**

Discuss the following aspects in the answer body –

Explain what is a merger and why are so many state owned banks being consolidated.

Discuss the various reasons cited by the government for its decision to merge state owned banks.

Explain the effect such mergers will have on the economy in detail while presenting pros and cons.

**Conclusion:**

Conclude with significance of such move to the current conditions of the economy.

Government announced mega bank amalgamation plan that merged 10 PSBs into four larger entities. The four new banks are-

- **Punjab National Bank, Oriental Bank of Commerce and United Bank of India** are to merge to form **the country's second-largest lender**. These three banks are technologically compatible as they use Finacle Core Banking Solution platform.
- **Canara Bank and Syndicate Bank** to amalgamate which would render the merged entity the **fourth-largest public sector bank**.
- **Union Bank of India to acquire Andhra Bank and Corporation Bank** which would make the merged entity the **fifth largest public sector bank**.
- **Indian Bank** (Strong presence in South India) is to **merge with Allahabad Bank** (strong presence in East & North India) – To **maximise geographical synergies**.

History of bank mergers-

- **Narasimham Committee of 1998** had proposed a three-tier banking structure for India – Three large banks of international size, eight to 10 national banks and a large number of regional banks.
- Government had merged **Dena Bank and Vijaya Bank with Bank of Baroda on January 2019, creating the third-largest bank** by loans in the country.
- Earlier, **the State Bank of India** had acquired **its associate banks and Bhartiya Mahila Bank**.
- With these series of mergers, the number of state-owned banks is **down to 12 from 27**.

Other reform measures-



- There will be a number of smaller reforms to the boards of the banks that are aimed at improving their efficiency and accountability.
- In order to make the management accountable to the boards of the banks, **a board committee would be made in charge of appraising the performance of officers** of the rank of general managers and above, including the managing director.
- The banks have also been allowed to **recruit chief risk officers from the market**, at market-linked compensation **to attract the best available talent**.
- Other reform measures were aimed at **increasing the engagement of non-official directors**, allowing bank boards to **reduce or rationalize the number of committees**, and increasing the effectiveness of the directors on the Management Committees of Boards by increasing the length of their terms.

#### How will the mergers help the banking sector?

- The move is aimed at creating a **robust banking system with global reach**.
- The mergers will help **create stronger institutions** thereby leading to **efficiencies of scale** and **stronger balance sheets**.
- It will help **rationalize costs** across many areas including branches, people, technology etc.
- **Customers** should be able to **get better service and better product suite** and the best of all the merged entities.
- **The Banking sector as a whole will get strengthened** due to obvious efficiencies and will lead to **enhanced productivity** and better results thereby leading to better lending too.

#### Way Forward

- Dual regulation by the Ministry of Finance and RBI on PSBs often results in paralysis in decision making – which makes consolidation of banks a redundant measure if they are not given power to act swiftly, as pointed by PJ Nayak.
- Governance of public banks needs to be improved before making any significant change in any emerging architecture.
- Bigger banks offer more resilience to the banking sector but overlooking bigger red flags like strong credit appraisal and risk control system would do little help in creating robust banks.
- Therefore due focus on ensuring strong foundation of PSBs is important.

While India has had the longest, uninterrupted and most substantial ties with Gulf nations, it also has the highest stake in regional stability because of its energy and economic interests. Analyse.

[Livemint](#)

#### ***Why this question:***

*In the early hours of 14 September, ten unmanned drones from Yemen caused severe damage to Saudi Arabia's oil facilities in the Eastern Province north of Riyadh. The target: the oil processing plant at Abqaiq and the country's second-largest oil field at Khurais. As markets opened on 16 September, oil prices went from \$59 to \$71 per barrel, though they eased later after the US announced it would release its reserves to stabilize prices.*

#### ***Key demand of the question:***



*One should discuss the recent happenings and the oil crisis that the world countries are facing.*

**Directive:**

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

**Structure of the answer:**

**Introduction:**

*Explain in brief the recent happenings of oil explosions.*

**Body:**

*Explain that In West Asia, India has an eight million-strong resident community, whose welfare is of paramount importance not only to the Centre but also several state governments.*

*Take cues from the article and explain the relevance of it to India and then discuss in detail the relevance of India and its role in the stability of the region.*

**Conclusion:**

*Conclude with what should be the way ahead.*

India's relations with the West Asian countries are historical since the independence. India has interests in economic, political, security and strategic fields with the West Asian nations. For decades, India was a passive player in West Asia-a beneficiary of good relationships with multiple actors. Historically, India's West Asia policy has been multi-directional. During the Cold War years, India maintained close economic cooperation with both Saudi Arabia and Iran, the rival poles in regional geopolitics. In the post-Soviet world: The bi-directional approach has been expanded to a tri-directional foreign policy to accommodate the three key pillars of West Asia — Saudi Arabia, Iran and Israel.

#### **Importance of west Asia for India**

India has huge stakes involved in the region such as energy, trade and safety of Indian community in the region.

Energy security: 70 per cent of India's imported energy needs come from West Asia and this dependence will only increase as the Indian economy continues to grow at 8 per cent or more.

#### **Security of Indian community:**

- India is the largest recipient of foreign remittances from west Asia.
- 11 million Indians working in West Asia. Therefore, stability in the region is high on India's core agenda.
- To counter radicalization: close cooperation is essential to counter radicalization in India.
- Gate way to central Asia : West Asia is gate way to land locked and energy rich central Asia .
- Geostrategic importance: To reduce the influence of china in west Asia and in Arabian Sea. China is continuously making in road to west Asia through OBOR initiative.

#### **Challenges in west Asia**

- **Political instability -**
- The security situation in West Asia has been continuously deteriorating ever since the onset of the Arab Spring in December 2010.



- The internal security situation in Syria, Iraq and Yemen has gone from bad to worse. The regional powers continue to fight proxy wars on sectarian lines, pumping huge amount of money and weapons to bolster their favored groups.
- The involvement of extra-regional players such as the USA and Russia in the internal conflicts in West Asia has further aggravated the situation.
- The GCC-Iran rivalry, Shia-Sunni conflict, external intervention in the region, the fear of rise of religious radicalism etc. have further contributed to instability in West Asia.
- **Terrorism:** Terrorism has emerged as the biggest security threat to the region. The rise of the Islamic State in Iraq and Syria (ISIS) is the most disturbing trend.
- **Saudi-Iran rivalry:** destabilizing West Asia and influencing West Asian geopolitics.
- **Pakistan factor:** Pakistan is very close ally of many west Asian countries especially with GCC.
- **Shia- Sunni divide** may impact internal security of India.
- India's close relation with Israel is another sore point with west Asia.
- India's close relation with Iran may antagonize Saudi Arabia. India has to balance its ties with all three regional power in west Asia-Iran, Israel and Saudi Arabia.

#### India's "Look West" policy

India adopted look west policy in 2005. However, the policy did not get much attention since 2005. Recent visit of Prime Minister Narendra Modi to number of west Asia countries has the potential to transform our engagement with West Asia.

#### Change in West Asian strategic thinking

- Several factors have contributed to this fundamental shift in West Asian strategic thinking.
- First, the structural change in the global energy market with West Asian oil and gas increasingly heading to South and East Asian markets rather than to the Trans-Atlantic markets.
- Second, partly as a consequence of this change in flows and partly owing to the fiscal stress faced by the trans-Atlantic economies, West Asia is looking to India and other Asian powers to step in and offer security guarantees to the region. Many GCC states have welcomed defence cooperation agreements with India.
- Third, in the wake of the Arab Spring and the mess in Egypt and Iraq, the Gulf States find India and China to be more reliable interlocutors than many western states.
- Fourth, under pressure from radical and extremist political forces within West Asia, most states in the region have come to value the Indian principle of seeking and securing regional stability as an over-riding principle of regional security.

Indian economy is one of the fastest growing major economies in the world. To sustain the high economic growth of around 8% in the coming decades, energy security is of paramount importance to India. Despite India's efforts to develop its domestic energy capacity, it is dependent on imports for 80% of its oil needs, of which roughly 55% is sourced from the Persian Gulf region and more than





80% of gas supplies. This highlights the need for energy policy cooperation with the resource rich West Asian countries. Consequently, India has adopted a 'Look West' or 'Link West' policy in this regard.

*Saudi Arabia is India's second largest source of oil.* Iraq is also a major source of Indian energy imports. Further, the energy imports from Iran picked up in the recent past after the easing of sanctions by US. India has also enhanced its bilateral engagement with countries like Oman and UAE and also at institutional level with GCC (Gulf Cooperation Council).

Though countries such as Saudi Arabia, Kuwait, Iran, Iraq and Qatar will continue to be its major suppliers of oil and gas, India is trying to walk the diplomatic tight rope in West Asia by partnering with Israel in its Leviathan natural gas field in the East Mediterranean Sea.

India's energy relation with West Asian countries are intricately related with the Central Asian countries. Thus India has developed Chabahar port in Iran to access the Central Asian energy market. Besides energy infrastructure projects like TAPI gas pipeline and International North South Corridor will have ripple effects on the India's energy engagements with the West Asian Nations.

India's energy policy engagement with the West Asian region is also related to providing maritime security in the region as most of the shipping vessels pass through Persian Gulf and Indian Ocean. Other major powers like China have increased its footprint in the region. Thus India must also take stock of this geopolitical game in order to secure its own energy security.

**Analyse the causes of economic slowdown in detail and suggest measures to boost the economy.**

*Livemint*

**Why this question:**

*The article talks about the causes of recent economic slowdown being witnessed by the country.*

**Key demand of the question:**

*One should explain the causes of the economic slowdown and what are the necessary measures that need to be taken to overcome the situation.*

**Directive:**

*Analyze – When asked to analyse, 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:**

*Start with what is an economic slowdown.*

**Body:**

*Explain in detail the following dimensions:*

*Discuss first what is meant by slowdown in an economy?*

*What is the problem with Indian economy?*

*Discuss the structural and cyclical reasons leading to do the current slowdown in the Indian economy.*

*Suggest what all reforms can be done?*

**Conclusion:**

*Conclude with way forward.*

Economic growth is measured by an increase in gross domestic product (GDP), which is defined as the combined value of all goods and services produced within a country in a year. Many forces contribute to economic growth. However, there is no single factor that consistently spurs the perfect



or ideal amount of growth needed for an economy. Unfortunately, recessions are a fact of life and can be caused by exogenous factors such as geopolitical and geo-financial events.

#### **Causes for slowing economy:**

- One of the reasons of slowing down of growth can be attributed to shortage of money. While currency in circulation is not a problem, the money that much of the formal economy uses for transactions, and see as bank deposits i.e. M3 or broad money and is eight times the hard currency in circulation, is not finding its way to the market.
- Our Financial system which converts base money to M3 is not functioning smoothly. When banks give new loans, they “create” money. When the financial system is not functioning effectively, this process of money creation slows down, and the ratio of M3 to M0 (also called the money multiplier) falls.
- This can be seen in the failure of banking sectors to extend loans to credit seekers in the era of increasing NPAs.
- Recent failure of Non-Banking Finance Companies (NBFCs) which had stepped in to support credit growth has resulted in restricted growth to ensure survival, as a result of which system-wide credit growth has slowed sharply.
- Government has also failed in addressing these issues as there is a general apprehension of running into the risk of another build-up of bad loans.
- There has been a reported drop in the households’ financial savings to GDP ratio in 2017 to 9.4% highlighting the fact that there aren’t enough savings available for both the government and the private sector to be funded adequately, which further impedes the growth.
- There are several other challenges such as a weak and ailing real-estate market, problems in agriculture, worrying levels of external dependence in India’s energy ecosystem, crumbling municipal infrastructure, and stagnating capital flows, among several others.

#### **Curing the ailing growth**

- One way of addressing the economic woes is to speed up the privatization of Public Sector Banks as it has been established beyond doubt that there are structural problems with a state-owned banking system.
- Reducing bank interest can also potentially boost the capacity of lenders to extend loans and, in turn, boost growth in the world’s fastest-growing major economy.

#### **Way Forward**

India's growth has been impressive in recent years but this is a country whose development is hampered by endemic structural problems. India requires significant investment in infrastructure, manufacturing and agriculture for the rapid growth rates of the last fifteen to twenty years to be sustained. In order to fulfill this it needs to create a robust financial structure that can serve the needs and demands of growing nation.



India's experience with existing free trade agreements has been lukewarm so far, explain the underlying reasons and discuss what should be the way ahead to change this experience into a positive outcome.

### Reference

#### **Why this question:**

*The article critically examines the Indian scenario of Free trade agreements and its effects on India's economy.*

#### **Key demand of the question:**

*India signed a series of Free Trade Agreements (FTA) in Asia that came into force in the 2000s. Across industry and policy-makers, a view has emerged that these FTAs have not served India well, and even actively damaged Indian industry. Thus one has to analyse in detail the aspects of FTAs with respect to Indian economy.*

#### **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 brief define what FTAs are.*

##### **Body:**

*Explain in what way the success of an FTA should be judged against its objective of enhancing trade. Discuss the factors responsible for such an effect and also suggest what steps should be taken to ensure better realization of the FTAs.*

##### **Conclusion:**

*Conclude with way forward.*

Free trade agreements are a key to creating seamless trading, but there are genuine concerns when India signs up new such pacts because of past experience.

Trade theory has consistently been a strong proponent of free trade of goods, services, capital and labour. However, a growing wave of protectionism has dominated global trade of late. While it is difficult to assess whether this will lead to a significant shift in the global trade paradigm, a review of India's existing free trade agreements (FTAs) before negotiating new ones is necessary.

### **Review of India's FTAs:**

India is a fairly open economy with overall trade (exports plus imports) as a percentage of GDP at around 40%. Its exports have diversified both in terms of markets and products in the past two decades. Indian exports have gradually found their way into new markets and the export sector has moved up the value chain, leading the way with high-value products like industrial machinery, automobiles and car parts, and refined petroleum products.

Indian exports are sensitive to price changes, global demand and supply-side bottlenecks. Estimates suggest that a 1% increase in the country's international relative export price could reduce export volume growth by about 0.9% for all industries, and by about 1.1% for the manufacturing sector. However, global demand operates with a factor slightly above 1.5, suggesting that, given the composition of our export basket, increase in global demand drives India's exports much more than price cuts.



India's exports to FTA countries have not outperformed overall export growth, or exports to rest of the world.

For example, India's trade deficit with Asean (Association of Southeast Asian Nations), South Korea and Japan has doubled to \$24 billion in FY2017 from \$15 billion in FY2011 (with the signing of the respective FTAs) and \$5 billion in FY06.

Also, India's exports are much more responsive to income changes as compared to price changes. So, a tariff reduction or elimination does not boost exports significantly. Utilization rate of regional trade agreements (RTAs) by exporters in India is very low.

Most estimates put it at less than 25%. Lack of information on FTAs, low margins of preference, delays and administrative costs associated with rules of origin, non-tariff measures, are major reasons for under-utilization.

When it comes to the **India-Asean FTA**, there is a deterioration of the quality of trade. Apart from the surge in total trade deficit due to tariff cuts, sector wise trade flows also paint a grim picture.

As per the UN's Harmonised System of Product Classification, products can be grouped into 99 chapters, and further into 21 sections like textiles, chemicals, vegetable products, etc. India has experienced a worsening of trade balance (deficit increased or surplus reduced) for 13 out of 21 sectors.

This also includes value-added sectors like chemicals and allied, plastics and rubber, minerals, leather, textiles, gems and jewellery. Sectors where trade balance has improved include animal products, cement and ceramic, arms and ammunitions. Sectors where trade deficit has worsened account for approximately 75% of India's exports to Asean.

So, there are genuine concerns of trade asymmetry when India signs up new FTAs because of past FTA experience. However, FTAs are instrumental in creating seamless trade blocs that can aid trade and economic growth. Here are some suggestions while going forward with future FTA negotiations.

#### **Way Forward:**

Before getting into any multilateral trade deal, India should review its existing FTAs in terms of benefits to various stakeholders like industry and consumers, trade complementarities and changing trade patterns in the past decade. Negotiating bilateral FTAs with countries where trade complementarities and margin of preference is high may benefit India in the long run.

Also, higher compliance costs nullify the benefits of margin of preference. Thus reducing compliance cost and administrative delays is extremely critical to increase utilization rate of FTAs. Proper safety and quality standards should be set to avoid dumping of lower quality hazardous goods into the Indian market.

#### **Conclusion:**

Circumvention of rules of origin should be strictly dealt with by the authorities. Well-balanced FTA deals addressing the concerns of all the stakeholders are the need of the hour.



Discuss how the Automobile Industry slump coincides with an overall economic slowdown of the Industrial Sector that has affected almost all segments of the society?

*Timesofindia*

**Why this question:**

*The state of the Indian economy is at a worrying situation at present. The GDP growth rate has slipped to 5 per cent in the first quarter of Financial Year 2020, the lowest in over six years. The recent collapse of the automobile sector, the rising Non-Performing Assets, the falling demands of the consumers proves the slowing down of the Indian Economy.*

**Key demand of the question:**

*Explain in what way the slowdown in the automobile sector has a multiplier effect on the entire economy.*

**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:**

*Comment on the fact that over the past few months, the Automobile Industry is facing a slowdown.*

**Body:**

*Explain first the reasons for the slowdown of the overall economy.*

*Why is there a slowdown in automobile industry? How is it related to Industries and back to all the sectors of the society?*

*Explain the overall impact on the Industrial Sector due to Slowdown in the Automobile Sector.*

**Conclusion:**

*Conclude with suggestions to contain the slowdown and what needs to be done.*

The state of the Indian economy is at a **worrying situation** at present. The GDP growth rate has **slipped to 5 per cent** in the first quarter of Financial Year 2020, the **lowest in over six years**.

The recent **collapse of the automobile sector**, the **rising Non-Performing Assets**, the **falling demands of the consumers** proves the slowing down of the Indian Economy.

Over the past few months, the **Automobile Industry is facing a slowdown**. The sale of vehicles across categories in the country slumped badly. The slowing down of the automobile sector resulted in **slowing down of production** as well as **job cuts** in the sector.

**Reasons for the slowdown of the Overall Economy:**

- Major economic reforms brought about in the recent past like **Demonetization** was brought about in 2016, **GST** was rolled out in July 2017. Just as the effects of these were weaning off the **Infrastructure Leasing & Financial Services triggered** the crisis of Non-Banking Financial sector credit crunch in 2018.
- There is also a **global economic slowdown** that is happening and given the fact that India is a net commodity exporter, there has been a slump in the volumes of exports.
- **Non-Food Inflation** continued to surpass food inflation in the past two years, amounting to income transfer from rural to urban areas.
- The health of real estate sector is also in a bad shape as there is **increasing inventory of unsold properties**.



**Reasons for the slowdown in the Automobile Industry:**

- The primary reason behind the slump in the automobile sector is considered to be the **slowdown of the income growth** and **rising crisis of the Non-Banking Financial Companies (NBFC)**.
- There is a lack of clear migration policy towards **Electric Vehicles (EV)**. This creates confusion among buyers, **deficit monsoon** and **liquidity crunch** in the economy are also contributing towards a reduction in automobile sales.
- There is a **decline in the demand of new vehicles**, which is mainly because of postponement by the consumers in anticipation of an **expected fall in Goods and Service Tax (GST) rates**.
- The consumers also expect that the **transition from Bharat Stage-IV (BS-IV) to BS-VI** may offer to big discounts between January and March 2020.
- There has been significant **growth in pre-owned cars** over the past two years. This shows that the consumer now prefer to invest in a second hand car. This led to **sharp price hikes and fall in the demand** of new vehicles.
- The government increased the official maximum load **carrying capacity of heavy vehicles by 20-25%** with the aim of bringing down logistics costs. This adversely affected the sale of automobiles, particularly commercial vehicles and is believed to have a weightage of 10% in explaining the decline in the auto industry sales.
- Increased availability of **automobile rentals**, **tech-led** disruptions like shared mobility from firms such as Ola and Uber promotes consumers to rent vehicles instead of buying them.

**Overall impact on the Industrial Sector due to Slowdown in the Automobile Sector:**

- The continuous decline in the sale of automobile has increased the pressure on the manufacturers to **cut down on their costs, and reduce headcounts**.
- The slowdown of the Automobile Sector has resulted in the **laying off of 8-10 lakh contract employees** in recent months in the auto parts sector.
- The permanent employees of the automobile sector are also in a dilemma as there is **not much work in the factories due to poor demand from original equipment manufacturers**. For instance, leading auto parts maker Bosch had to close its factory for five days recently.
- Crisil Ratings has estimated that **tractor makers** would witness 5-7% sales contraction this fiscal. Weak growth in rural income, moderation in rural infrastructure spending, higher channel inventory, and the effect of a high base will lead to de-growth in tractor sales volume.
- The slowdown has resulted in an **8% loss in GST** collection in the first six months of 2019. In order to recover the loss the auto industry will need to grow at a rate of at least 7% in the remaining 6 months of the Financial Year 2020.

**Conclusion:**

The economic slowdown has affected every section of the society. The slowdown can be contained to some extent by improving credit availability, addressing the pain points in some sectors, and stepping up capital spends.



Fundamental weaknesses in the structure of the economy need to be removed to sustain high growth along with countercyclical policies to boost demand. Explain the role of government in this case.

Indianexpress

**Why this question:**

*The article states that despite the recessionary conditions in the industrialised countries, it may still be possible to pitch for a higher growth in exports. The recent announcements on boosting exports is a recognition of this*

**Key demand of the question:**

*Explain in what way fundamental weaknesses in the structure of the economy need to be removed to sustain high growth along with countercyclical policies to boost demand.*

**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:**

*In brief discuss the current economy of the country.*

**Body:**

*First using statistics explain the issues marring the economy of the country.*

*Explain – Several sectors such as automobiles and housing are facing a sharp weakening of demand. And there has been a significant fall in the savings and investment rate. Within household savings, the proportion of savings in financial assets has sharply declined.*

*Discuss what measures need to be taken to overcome this challenge.*

**Conclusion:**

*Conclude with way forward.*

India's GDP growth rate slowed down to 5 per cent in Q1 of FY20 and is expected to be around 6 per cent or below in this financial year.

- As former Reserve Bank of India governor Y V Reddy mentioned recently, a combination of cyclical and structural factors have been responsible for the slowdown.
- Global uncertainties have added to the problem.
- In the last few weeks, the government has announced several measures to improve both consumption and investment in different sectors and for the economy as a whole.
- The announcement of reduction in corporate tax rates announced recently may help in reviving the sentiments of the private sector but the tax revenue may also decline and put pressure on fiscal deficit. But, these measures alone may not help in getting higher growth.

**Structural issues to be tackled-**

- We need to focus on **three structural issues:**
- **Physical infrastructure development,**
- **Raising human capital** and
- **Revival of rural economy** for a long-term growth of 7 to 8 per cent and attaining \$5 trillion economy by 2024.

**Infrastructure Development-**

- Spending on infrastructure will have multiplier effects in the overall economy including stimulating private investment, aggregate demand and jobs.
- Construction sector was an important source of job creation during 2004-05 to 2011-12. This sector has to be revived in order to create growth and employment.
- The government seems to be fast tracking public capex, encouraging public sector enterprises (PSEs) to invest more and trying to clear the pending bills for the corporate sector and MSMEs.
- The announcement of Rs 100 lakh crore over five years for infrastructure by the government is an important measure.
- The Vijay Kelkar committee's recommendation on PPPs would be useful. The private sector's role is equally important.

**Raising human capital for higher growth**

- Health and education achievements are essential for human capital. Yet the country's progress on both these aspects leaves much to be desired
- The Niti Aayog says that only 2.3 per cent of Indian workers have formal skill training compared to 70 to 80 per cent in other countries.
- Promotion of technology and knowledge economy will add to growth. One can't have a "demographic dividend" for growth with low human capital.
- Women's labour participation rates have been low and declining. Raising women's human capital and participation rates can improve economic growth.
- We may also not achieve high human capital and productivity with 40 per cent of our children suffering from malnutrition.

**Revival of rural economy**

- 70 per cent of our population lives in rural areas and has stagnant incomes and wages.
- There is a need for revival of the rural economy with infrastructure investment and structural reforms.
- Agricultural marketing reforms should be a priority.
- For better price discovery, agriculture has to go beyond farming and develop value chains comprising farming, wholesaling, warehousing, logistics, processing and retailing.
- Agricultural exports should be promoted with various policies. Similarly, rural infrastructure and water management are other priorities.
- Stimulus and structural reforms can raise farmers' prices and wages and rise in demand for manufacturing and services.

**Suggestions:**

- Lower GST and local taxes, as high as 28 % . Like for both tobacco and automobiles.



- Boost private investment- Thru international MOUs , like petro net and tellurian.
- Give sops like tax reduction for consumers to have higher disposable income.
- Experiment on small scale other viable options like, tax free income for low income women.
- Giving preference to infrastructure over capital expenditure.
- Taking measures to boost rural demand and unorganized sector which forms 90 % of the workforce.

Recent steps like rolling back of surcharges, merger of banks can give short term gains, but long term requires bringing structural changes.

Inclusive growth and issues arising from it.

Can India Achieve the UN Goal Of Gender Equality By 2030? What are the steps and measures that can be taken on-ground to determine the way forward?

#### Reference

#### **Why this question:**

*A report compiled by Equal Measures 2030, found that not a single country is on track to achieve gender equality by 2030; India ranked 95th out of 129 countries. Thus makes it important for us to analyse the UN goal of gender equality by 2030.*

#### **Key demand of the question:**

*One has to elucidate on the progress being made by India on gender equality front. Discuss the challenges and concerns associated while suggesting way forward.*

#### **Structure of the answer:**

#### **Introduction:**

*In brief throw light on the UN goal of gender equality by 2030.*

#### **Body:**

*Since gender inequality constitutes one of the history's most persistent and widespread forms of injustice, eliminating it will call for one of history's biggest movements for change. Women and girls continue to suffer discrimination and violence in every part of the world.*

*Explain the Indian scenario.*

*Why is gender equality important? Its relationship with development of the country?*

*UN Goal 5 and India – quote facts and explain the current status of India.*

*Discuss solutions on this front.*

#### **Conclusion:**

*Conclude with need for holistic and multi-pronged approach.*

Gender equality is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous and sustainable world.

A report compiled by Equal Measures 2030, found that not a single country is on track to achieve gender equality by 2030; India ranked 95th out of 129 countries. To achieve gender equality, models and solutions need to create an enabling environment targeting gender inequality, especially gender-based violence (GBV). This creates equal access to opportunities and resources for women and girls in India. Effective programs have put women at the centre of the programming.

The Ministry of Statistics and Programme Implementation noted that 25% of recorded cases under crimes against women are related to sexual assault. Violence functions as a mechanism to maintain existing power inequalities, especially to subjugate women. Gender-based violence (GBV) is founded



in this unequal power-relations between men and women. It prevents women from achieving their full potential. But GBV cannot be attributed to any single factor. Therefore, strategies to prevent gender-based violence must be grounded in programmes and interventions that promote gender equality as the ultimate goal.

India scored 56.2 out of 100 in the study that led to the report, with 100 being absolute gender equality. Our country is not alone in falling short—none of the UN member states is on track to achieve gender equality by 2030. Moving beyond binaries, India has a long way to go in terms of mainstreaming equality for all.

However, there is good news. Different legislative acts enable safety, security and justice such as POSH—which is the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013, Dowry Prohibition Act, 1961 and more. The role of civil society becomes critical to witness the realization of the goal and subsequently, better ranking in the Gender Index.

### **What are the steps and measures that can be taken on-ground to determine the way forward?**

Only 25.5% of women participate in the workforce compared to 53.3% of males. The approach to achieving gender equality and therefore providing space for girls and women to fulfill their aspirations, requires an ecological framework that promotes gender equality at the heart of every design, be it policy or programme. It needs to address the complex interplay of factors that operate at the individual, relationship, community and greater societal level. Besides, women are not a homogenous group. Intersecting social identities such as sexual orientation, gender identity, caste and socio-economic status render some women even more vulnerable to violence. This necessitates a nuanced and holistic approach to preventing gender-based violence.

The approach can be translated on-ground to create sustained solutions in varied ways:

- Increasing women's economic independence through improving financial literacy, access to financial services and assisting women to develop their employment prospects.
- Working with vulnerable populations to enable the realization of sexual and reproductive health and rights.
- Skill development through life skills education for low-income women equipping them with knowledge, skills and an understanding of their rights and entitlements enabling them to manage their lives better.
- Working on challenging socially constructed gender norms rooted in patriarchy that result in harm to all genders binary and non-binary (LGBTQAI+).
- Improving the prevention of violence and violence response systems through community-based mechanisms and concerted sensitisation mechanisms.
- Supporting the meaningful involvement of women and men affected by gender-based violence in the design and delivery of services and the advocacy and policy response through the provision of technical assistance.

It is essential to not only ensure women and girls are free from violence but that they have the agency, autonomy and self-determination to reach their potential and lead lives they value. But it cannot be done with a single solution.





Factory-based supported programmes like HERrespect, Women in Factories etc., with brands and their supply chain factories focus on the development of a gender-sensitive work environment and robust workplace systems to address women's issues, including sexual harassment and discrimination.

### Conclusion:

When we collaborate across the board with every stakeholder to combine different approaches to provide an intelligently designed holistic solution, we arrive at the cusp of a breakthrough, making on-ground implementation smoother and robust.

Ongoing campaigns in the media and concerted efforts at policy and legislature echo the sentiment of pushing through for a gender-equal world. Together, these, along with a plethora of micro approaches and varied collaborations, hold the promise of ecology where women and girls thrive.

Empowering women does not just benefit her as an individual but her entire community. The United Nations states the economic impact of achieving gender equality in India is estimated to be U.S. \$700 billion of added GDP by 2025.

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

What is ZBNF? What are the benefits and how is it better than organic farming?

Elucidate.

[The hindubusinessline](#)

### **Why this question:**

*The article analyses in detail the effect of ZBNF and the effect of recent promotion of the concept in the annual Budget of the country.*

### **Key demand of the question:**

*One must discuss the concept of ZBNF in detail and discuss its importance to Indian agriculture system.*

### **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:**

*Define the concept in brief.*

#### **Body:**

*Explain what is ZBNF in detail – It involves the application of nature's principles in farming. It practices no-till, no chemical use in farming. Alongside, dispersal of clay seed balls to propagate plants is done. Explain the key aspects of it.*

*Discuss the advantages it holds, benefits and in what way it is better than organic farming; with examples/case studies of some successful states.*

#### **Conclusion:**

*Conclude that the dominant paradigm of chemical-based agriculture has failed and regenerative agriculture is the emerging new science.*

Zero Budget Natural Farming (ZBNF), which is a set of farming methods, and also a grassroots peasant movement, has spread to various states in India. It has attained wide success in southern



India, especially the southern Indian state of Karnataka where it first evolved. ZBNF inspires a spirit of volunteerism among its peasant farmer members, who are the main protagonists of the movement.

The four pillars of ZBNF:

Microbial culture: It provides nutrients, but most importantly, acts as a catalytic agent that promotes the activity of microorganisms in the soil, as well as increases earthworm activity; During the 48 hour fermentation process, the aerobic and anaerobic bacteria present in the cow dung and urine multiply as they eat up organic ingredients (like pulse flour). A handful of undisturbed soil is also added to the preparation, as inoculate of native species of microbes and organisms. It also helps to prevent fungal and bacterial plant diseases.

Treatment of seeds, seedlings or any planting material: It is effective in protecting young roots from fungus as well as from soil-borne and seed borne diseases that commonly affect plants after the monsoon period.

Mulching: Soil Mulch: This protects topsoil during cultivation and does not destroy it by tilling. It promotes aeration and water retention in the soil. Straw Mulch: Straw material usually refers to the dried biomass waste of previous crops; it can be composed of the dead material of any living being.

Moisture: it is a necessary condition for the roots of the plants.

It is, basically, a natural farming technique that uses biological pesticides instead of chemical-based fertilizers. Farmers use earthworms, cow dung, urine, plants, human excreta and such biological fertilizers for crop protection. Intercropping and Contour Bunds are some of the techniques of ZBNF. It reduces farmers' investment. It also protects the soil from degradation.

ZBNF works not just in agronomic terms, but also brings about a variety of social and economic benefits. ZBNF brings improvements in yield, soil conservation, seed diversity, quality of produce, household food autonomy, income, and health.

Benefits:

- In ZBNF, yields of various cash and food crops have been found to be significantly higher.
- E.g. yields from ZBNF plots were found on average to be 11% higher for cotton than in non-ZBNF plots.
- The yield for Guli ragi (ZBNF) was 40% higher than non-ZBNF.
- Input costs are near zero as no fertilizers and pesticides are used.
- Profits in most areas under ZBNF were from higher yield and lower inputs.
- Model ZBNF farms were able to withstand drought and flooding.
- Notably these are the serious emerging concerns with regard to climate change.
- Planting multiple crops and border crops on same field provides varied income and nutrient sources.
- Overall, there is



- ✓ reduced use of water and electricity
- ✓ improved health of farmers
- ✓ flourishing of local ecosystems and biodiversity
- ✓ no toxic chemical residues in the environment
- ✓ improvements in soil, biodiversity, livelihoods, water
- ✓ climate resilience
- ✓ women's empowerment and nutrition

How is ZBNF better than organic farming?

- Organic agriculture often involves addition of materials required in bulk and has to be purchased.
- These are large amounts of manure, vermicomposting and other materials.
- These turn out to be expensive for most small farm holders.

The programme can have a positive effect on many of the sustainable development goals. As ZBNF is applied in India's various agro-ecological zones, making farmers the innovators is essential. Agricultural scientists in India have to rework their strategy so that farming is in consonance with nature. The dominant paradigm of chemical-based agriculture has failed and regenerative agriculture is the emerging new science.

**Discuss the importance of reviving and managing indigenous species and agricultural practices in India.**

#### Reference

#### **Why this question:**

*The question aims to analyse the importance of reviving and managing indigenous species and agricultural practices in India amidst rising use of HYV seeds, chemical inputs etc. that have been eroding the soil fertility and leading to unsustainable agriculture.*

#### **Key demand of the question:**

*The question is straight forward and aims to analyse the importance of reviving and managing indigenous species and agricultural practices 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:**

*In brief quote data suggesting current unsustainable agriculture practices.*

##### **Body:**

*Explain what are the practices available for reviving and managing indigenous species and agricultural practices in India.*

*Discuss the pros and cons.*

*List out the benefits ranging from – ecological, socio-economic etc.*

*Suggest policies by the government in this direction.*

##### **Conclusion:**

*Conclude with way forward.*



“Everything else can wait, but not agriculture”- Jawaharlal Nehru, 1947.

Agriculture is the most important enterprise in the world. Agriculture is the process of producing food, feed, fiber and other desired products by the cultivation of plants and the raising of domesticated animals. In a true sense, it is a productive unit where human get the free gifts of nature namely, land, light, air, temperature, rain water, humidity etc. are integrated into a single primary unit indispensable for human beings.

The effect of prolonged and over usage of chemicals in crops production has resulted in human health hazards and pollution of environment and ground water. At present, the issue is whether to continue with the chemical inputs-based intensive technologies or to go back to the traditional environment friendly farming practices like organic farming for sustainable production, income and socio-economic development of the farming community. In this context that biological pesticides are being considered as environmentally safe, selective, biodegradable, economical and renewable alternative for use in organic farming system.

Green Pesticides or ecological pesticides which are believed to be environmentally friendly and thus cause less harm to the eco system and animal health. In agrology, pesticides are evaluated for minimal average environmental effects. Biocides include germicidal, antibiotic, antibacterial, antiviral, antifungal, antiprotozoals and antiparasites. Pesticides typically come in the form of sprays and dusts. Many ecological pesticides are biological pesticides.

Environmental friendly agricultural technologies for food safety appropriate technologies, which do not assault the nature, would have key roles to play in ensuring food security, in improving human health and in rehabilitating and conserving the environment to safeguard the well-being of the posterity. Instead of striving for more “green revolutions” with emphasis on miracle seeds, hard-hitting, synthetic and engineered pesticides and increased use of fertilizers, the future must look to natural ways and processes for augmenting agricultural productivity.

Over the centuries, indigenous peoples have provided a series of ecological and cultural services to humankind. The preservation of traditional forms of farming knowledge and practices help maintain biodiversity, enhance food security, and protect the world’s natural resources.

#### **Different types of Indigenous agricultural practices:**

**Agroforestry:** Agroforestry involves the deliberate maintenance and planting of trees to develop a microclimate that protects crops against extremes. Blending agricultural with forestry techniques, this farming system helps to control temperature, sunlight exposure, and susceptibility to wind, hail, and rain.

**Crop Rotations:** The principles of crop rotation have been successfully used for thousands of years in agriculture and are still used today. Crop rotation is the practice of growing different crops on the same land so that no bed or plot sees the same crop in successive seasons. It is a practice designed to preserve the productive capacity of the soil, minimize pests and diseases, reduce chemical use, and manage nutrient requirements, all of which help to maximize yield. The practice of crop rotation builds better soil structure and increases the ability to store carbon on farms.

**Mixed-/Inter-cropping:** Mixed cropping, also known as intercropping is a system of cropping in which farmers sow more than two crops at the same time. By planting multiple crops, farmers can



maximize land use while reducing the risks associated with single crop failure. Intercropping creates biodiversity, which attracts a variety of beneficial and predatory insects to minimize pests and can also increase soil organic matter, fumigate the soil, and suppress weed growth.

**Polyculture:** Polyculture systems involve growing many plants of different species in the same area, often in a way that imitates nature. By increasing plant biodiversity, Polyculture systems promote diet diversity in local communities, are more adaptable to climate variability and extreme weather events, and are more resilient to pests and diseases. Polycultures are integral to permaculture systems and design and provide many advantages such as better soil quality, less soil erosion, and more stable yields when compared to monoculture systems.

In fact, all development efforts and activities should be within well-defined ecological rules rather than within narrow economic gains. Sustainable agricultural systems must be ecologically sound for long-term food sufficiency, equitable in providing social justice, and ethical in respecting path future generations and other species.

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.

Do you think the government must create a GST-type council for agriculture reforms and realize the implementation of agri-marketing reforms and to transfer agri-input subsidies directly to beneficiaries' accounts through Aadhaar? Discuss.

[Indianexpress](#)

**Why this question:**

*The article highlights agrarian reforms taken forward by the late parliamentarian Sri Arun Jaitley and brings out the need for GST –type council for agriculture reforms in the country.*

**Key demand of the question:**

*One must discuss.*

**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 brief narrate what are agriculture reforms? Why is there a dire need of them in the country.*

**Body:**

*Discuss the various agrarian reforms brought in ranging from subsidies to direct cash transfer. Explain in what way agri-policies impact Indian farmers, agriculture, food security, natural resources, especially water and soil, etc.*

*Discuss that Indian agricultural policies have an inherent consumer bias, and that input subsidies related to fertilisers, power, irrigation, interest subvention, etc do not promote efficiency in their use. Instead, they are creating several environmental problems like groundwater depletion.*

**Conclusion:**

*Conclude with way forward.*

Agriculture is the backbone of our economy as it contributes ~15% of GDP, 50% population are employed in this sector. But the growth rate is 2.1 % only. In the words of MS Swaminathan "if





agriculture fails everything else fails". According to former finance minister Arun Jaitley - highest pay off from economic reforms after GST is to come from agriculture.

### Problems in agriculture sector

The master problem is farmers' are not getting sufficient income from agriculture. This is due to -

- Syncing size of operational land holding and land degradation.
- Market instability.
- Regressive last like essential commodity act and APMC act.
- Very low penetration of Crop Insurance and formal credit to Agricultural sector.
- Agricultural policies have an inheritance consumer bias.

### Reforms till date

- Land Reforms abolition of zamindari, land ceiling and land redistribution
- Tenancy law reforms
- Model APMC act by Centre and launch of e National agricultural market
- Announcement of MSP PDS and price stabilization scheme laxing of FDI norms in food processing industries
- Subsidies on agricultural input like fertilizer electricity irrigation etc. (led to unjustified use of groundwater and fertilizers and cost groundwater depletion soil salinization and eutrophication in nearby water bodies).
- Direct Benefit Transfer (DBT) through the Jan Dhan Aadhar Mobile (JAM)
- Pradhan mantri Krishi sinchai Yojana(PMKSY) and Pradhan mantri fasal Bima Yojana(PMFBY).

### Why GST type council for agri reform is required?

- Agriculture is a **state subject**, therefore any Reform initiated by Centre must get States not to get implemented and bear fruits (Cooperative federalism is must)
- GST (biggest tax reform since 1947) is the greatest example of **cooperative federalism**
- In GST Council **all the states and the Centre sit together** to take policy decisions for implementation of GST.
- Therefore, **GST like Council** must be created to gain full cooperation of states in implementation of Agricultural reforms like agriculture market reforms and implementation of DBT
- It will create **one national market** for agricultural, minimize subsidy leakage, and improve agricultural efficiency.
- It will **shift policy inclination** from consumer bias towards farmer side.
- Ultimately it will realize **doubling of farmer income** by 2022.

### Challenges

- Extra financial burden on state for implementing this



- All state may not have the same level of expertise to go for the reforms like land leasing, together.
- State may be reluctant to part their power with Centre.

### Conclusion

Centre must be ready to increase the state share in devolution of sharable tax, in order to convince them to give up some of their autonomy in national interest.

Financing is of critical concern to the Indian agricultural sector. Discuss how providing interest subvention to small and marginal farmers through Direct Benefit Transfer allows them to get access to institutional credit more efficiently.

Financialexpress

#### **Why this question:**

*The recent studies made by RBI found that while livestock, forestry, and fisheries contributed around 38-42% of agriculture output during 2014-16, this sector got just 6-7% of total agriculture credit; clearly, this is an issue that needs addressing. Thus it is important for us to analyse Why it is good idea to give farmers interest-subvention via DBT.*

#### **Key demand of the question:**

*One has to discuss the pros and cons of Interest subvention to deal with the agrarian crisis plaguing the country and in what way it can be bridged by choosing the DBT route.*

#### **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 brief define what interest subvention in agriculture financing is.*

##### **Body:**

*Explain the following aspects –*

*Bring out the Positives: Increase of formal loan system, Increase in financial inclusion, Decrease in interest rates of money-lenders, Decrease in farmers distress due to availability of loan for agriculture on lesser rates of interest etc.*

*Then explain any negatives – Big farmers gets most of the benefit as scheme do not differentiate b/w small and big farmers, Net loan value is more than the entire agriculture input gives sign of diversion of funds, Though net loan value has increased, farmers income goes down, No substantial increase in production etc.*

##### **Conclusion:**

*Conclude that An income based policy should be used wherein the money is directly transferred to the farmers Aadhaar linked accounts. This will ensure better targeting and plug leakages. A subsidy income package can be designed on a per hectare basis, with higher rates for small landholders. Banks must be quickly compensated to prevent overburdening. Budgetary allocations can be improved.*

An average Indian farmer, who has to work on an uneconomic holding', using traditional methods of cultivation and being exposed to the risks of a poor agricultural season is almost always in debt. He is a perennial debtor.



Once the farmer falls into debt due to crop failure or low prices of crops or malpractices of moneylenders he can never come out of it. In fact, large part of the liabilities of farmers is 'ancestral debt'. Thus, along with his landed property, he passes on his debt to the next generation.

There are four main causes of rural indebtedness in India:

- (i) Low earning power of the borrower,
- (ii) Use of loan for unproductive purposes,
- (iii) Very high rate of interest charged by the village moneylender and
- (iv) The manipulation of accounts by the lenders.

In a few cases, the bad habits of the farmers (such as gambling, drinking, etc.) are responsible for his burden of 'unproductive' debt. However, in most cases, the cause of the debt may be some expensive social ceremony which the farmer was perhaps forced to "arrange for fear of a social boycott".

**Need for Finance:**

- Finance is required by farmers not only for the production and marketing of crops but also to keep a stagnant agricultural economy alive. Most Indian farmers live near the brink of starvation. A bad monsoon, a poor harvest, an accident or illness in the family forces him to approach the moneylender for a loan. In India, there is the prevalence of such 'distress' or unproductive loans. Agricultural finance in India is not just one requirement of the agricultural business but a symptom of the distress prevailing among the majority of the farmers.
- Rural credit includes not only credit provided to farmers but also credit extended to artisans, owners of small and medium industries in rural areas, small transport operators and so on. Two main sources of rural credit are private and institutional. The former includes private moneylenders, traders and commission agencies, relatives and landlords.
- The sources of institutional credit are rural co-operatives, commercial banks, particularly the State Bank of India (SBI). And, with the setting up of a specialized institution called the National Bank for Agricultural and Rural Development (NABARD) the Agricultural Refinance and Development Corporation (ARDC) has ceased to exist. Up to 1982 it was responsible for extending agricultural finance under guidance of the Reserve Bank of India.
- It may also be noted that the short- and medium-term credit requirements of the farmers is met by indigenous bankers or village moneylenders, co-operative credit societies and commercial banks. Long-term credit needs are met by land development banks and NABARD.
- The principal aim of institutional credit is to replace the widely prevalent money-lending at a very high rate of interest. Available data show that the rural credit institutions have succeeded to a considerable extent in achieving this aim.

**Salient features and benefits of Interest subvention scheme:**

- The objective of the scheme is to make available agricultural credit for Short Term crop loans at an affordable rate. The scheme is expected to boost agricultural productivity and production in



the country. Under this scheme, farmers will be given a short term crop loan up to Rs. 3 lakh payable within one year at an interest rate of 4% per annum.

- The scheme will be continued for 1 year and will be implemented by NABARD and RBI. The interest subvention will be provided to Public Sector Banks (PSBs), private Sector Banks, Cooperative Banks and Regional Rural Banks (RRBs) and to NABARD for refinancing to RRBs and Cooperative Banks.
- Interest subvention of 5% per annum will be provided to those farmers who pay the short term crop loan in time. Farmers will have to electively pay only 4% as interest. For farmers who do not pay crop loan in time the interest subvention of only 2% will be applicable as against 5% available above.
- This institutional credit is expected to demotivate farmers from taking loans from non-institutional sources of credit at high rates of interest.

Examine the role of “reducing food loss and waste” in achieving sustainable development goals. Also, discuss the role of women in reducing food loss and waste and suggest different approaches to the same.

#### Reference

#### **Why this question:**

*The question aims to ascertain the role of “reducing food loss and waste” in achieving sustainable development goals. And key role played by women in addressing the same.*

#### **Key demand of the question:**

*One must explain in detail the role of women in managing the global food losses and wastes and in what way it is necessary to achieve SDGs.*

#### **Directive:**

**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:**

*In brief describe the Food Loss and Waste that is occurring globally.*

##### **Body:**

*Explain how “reducing food loss and waste” performs against the sustainable food future criteria.*

*State the possible approaches to save the food that can be taken.*

*Discuss the role of women in reducing food loss and waste.*

##### **Conclusion:**

*Conclude that a “war on waste” has yet to be waged when it comes to food. Given that food prices recently hit historic highs and global food demand continues to rise, now is the time.*

“**Food loss and waste**” refers to the edible parts of plants and animals that are produced or harvested for human consumption but that are not ultimately consumed by people. “Food loss” refers to food that spills, spoils, incurs an abnormal reduction in quality such as bruising or wilting, or otherwise gets lost before it reaches the consumer.

**Food loss** is the unintended result of an agricultural process or technical limitation in storage, infrastructure, packaging, or marketing.

“**Food waste**” refers to food that is of good quality and fit for human consumption but that does not get consumed because it is discarded—either before or after it spoils. Food waste is the result of negligence or a conscious decision to throw food away.

**Key facts:**

- Significant amounts of food are lost or wasted every day, in every country, and at every stage in the supply chain, from the farm to household.
- According to an estimate by the Food and Agriculture Organization of the United Nations (FAO), about one-third of food produced is lost or wasted globally, which is approximately 1.3 billion tones.
- One out of every four food calories intended for people is not ultimately consumed by them.
- Costs aside, food loss has significant impacts on food security, environmental conservation, and climate change.
- It is estimated that saving one-fourth of the food currently lost or wasted globally would be enough to feed 870 million hungry people in the world, of which the highest number are in India.
- How “Reducing Food Loss and Waste” will play a crucial role in achieving sustainable development goals across the globe.

**Possible Approaches to save the food:**

- **Food redistribution:** Food redistribution or donation programs are a method for reducing both food loss and waste. As used here, “food redistribution” means voluntarily giving away food that otherwise would be lost or wasted to recipients such as food banks, which then redistribute the food to those who need it.
- **Evaporative coolers:** Evaporative coolers extend the shelf life of food and avoid spoilage by keeping food at lower-than-room temperatures without having to use electricity. This low-cost, low-energy technique provides an opportunity to store perishable foods longer in areas that lack electricity infrastructure or that has low-income farmers.
- **Plastic storage bags:** Damage from pests is a major source of food loss during the handling and storage phase of the supply chain. Take cowpeas for instance. The crop is important for many smallholder farmers due to the cowpeas’ ability to adapt to dry, hot conditions.
- **Small metal silos:** Small metal silos, which are intended for use by one farmer or by one household and generally hold between 250–1000 kg of crops, can be an effective strategy for reducing food loss at the storage stage, especially for cereals and pulses. Insufficient storage is a major source of food loss for farmers, especially in developing countries, where storage structures often do not keep harvested crops in hermetic or airtight conditions.
- **Plastic crates:** Using plastic crates instead of other forms of containerization has demonstrated significant reductions in food losses during handling and storage, particularly among fruits, vegetables, and other forms of fresh produce. In developing countries, 19 percent of fruit and vegetable loss occurs in the handling and storage stage of the food value chain.
- **Food date labelling:** Dates provided on the packaging of food and drinks, such as “use-by,” “sell-by,” and “best before,” is intended to provide consumers with information regarding the freshness and safety of foods. However, these seemingly simple dates can actually confuse





consumers about how long it is safe for them to store food and when they should dispose of uneaten items.

- **Consumer awareness campaigns:** Consumer attitudes and behavior play a large role in determining the amount of food that is wasted in households. Although changing the way people consume and throw out food can be difficult, communication campaigns can help influence consumer behavior at the household level.
- **Reduced portion sizes:** For restaurants and other food service providers, food portion sizes can dictate the amount of food waste that occurs within the four walls of their business, since larger portions increase the likelihood that a consumer will not consume all of the food purchased. Reducing portion sizes for consumers in both direct and indirect ways can both decrease food waste and save money for food providers.

#### **The Role of Women in Reducing Food Loss and Waste:**

- Women in both developing and developed countries have an important role to play in reducing food loss and waste, since women interact with food at each stage of the value chain from farm to fork.
- Close to the farm, women comprise 41 percent of the agricultural workforce worldwide and make up the majority of agricultural workers in South Asia and Sub-Saharan Africa.
- Close to the fork, surveys in a wide range of countries show that women are responsible for 85-90 percent of the time spent on household food preparation. Therefore, targeting women in food loss and food waste reduction campaigns could result in greater reductions than pursuing an unfocused campaign.
- One such gender-targeted initiative in Tanzania focused on providing female farmers with greater access to markets and supplied participants with access to solar drying technology that allowed for surplus fruits that might otherwise be lost to be dried and preserved.
- Another campaign in Australia called “1 Million Women” encourages women to take action on a number of environmental issues, including reducing food waste. The campaign has hosted events with a celebrity chef to raise awareness of food waste, and its official website provides tips on how to reduce waste and recipes for how to efficiently use food.

#### **Conclusion**

An amazing 24 percent of all food calories grown today are lost or wasted between the farm and the fork. This fact is ultimately a failure of economic and natural resource efficiency. The world faced an analogous failure of efficiency in the 1970s with energy. In the face of record oil prices and growing demand, the world essentially declared war on energy wastefulness and significantly improved its energy efficiency.

Yet a “war on waste” has yet to be waged when it comes to food. Given that food prices recently hit historic highs and global food demand continues to rise, now is the time.

**Write a note on Participatory Guarantee Scheme. Explain in what way it incentivises farmers to grow organic food along with the advantages and limitations of the scheme.**

[Indianexpress](#)

**Why this question:**

Recently The head of India's food safety regulator stated that the Union Agriculture Ministry's Participatory Guarantee Scheme (PGS) is expected to incentivise more farmers to grow organic food.

**Key demand of the question:**

One must discuss in detail the key features of Participatory Guarantee Scheme. Explain in what way it incentivises farmers to grow organic food along with the advantages and limitations of the scheme.

**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:**

In brief explain why the scheme was put in place.

**Body:**

Union Agriculture Ministry's PGS is a process of certifying organic products, which ensures that their production takes place in accordance with laid-down quality standards.

Discuss the salient features of the scheme.

Explain what are the associated benefits to it, especially for farmers to grow organic food.

Discuss the advantages of PGS and limitations.

**Conclusion:**

Conclude with way forward.

**Participatory Guarantee Scheme** is a process of certifying organic products, which ensures that their production takes place in accordance with laid-down quality standards. The certification is in the form of a documented logo or a statement. PGS is an internationally applicable organic quality assurance initiative that emphasizes the participation of stakeholders, including producers and consumers, and operates outside the framework of third-party certification. PGSs are "locally focused quality assurance systems" that "certify producers based on active participation of stakeholders and are built on a foundation of trust, social networks and knowledge exchange".

PGS, according to the definition, is "a process in which people in similar situations (in this case small holder producers) assess, inspect and verify the production practices of each other and take decisions on organic certification".

**Four pillars of PGS**

The government's 2015 PGS manual underlines that the system in India is based on "participatory approach, a shared vision, transparency and trust".

**PARTICIPATION**

Stakeholders such as producers, consumers, retailers, traders, NGOs, Gram Panchayats, and government organizations and agencies are collectively responsible for designing, operating, and decision-making.

Direct communication among the stakeholders helps create an integrity- and trust-based approach with transparency in decision-making, easy access to databases and, where possible, visits to farms by consumers.

**SHARED VISION**



Collective responsibility for implementation and decision making is driven by a common shared vision.

Each stakeholder organization or PGS group can adopt its own vision conforming to the overall vision and standards of the PGS-India programme.

### **TRANSPARENCY**

At the grassroots level, transparency is maintained through the active participation of producers in the organic guarantee process.

It can include information-sharing at meetings and workshops, peer reviews, and involvement in decision making.

### **TRUST**

A fundamental premise of PGS is the idea that producers can be trusted, and that the organic guarantee system can be an expression and verification of this trust.

The mechanisms for trustworthiness include a producer pledge made through a witnessed signing of a declaration, and written collective undertakings by the group to abide by the norms, principles and standards of PGS.

### **Advantages of PGS**

- Among the advantages of PGS over third-party certification, identified by the government document, are:
- Procedures are simple, documents are basic, and farmers understand the local language used.
- All members live close to each other and are known to each other. As practicing organic farmers themselves, they understand the processes well.
- Because peer appraisers live in the same village, they have better access to surveillance; peer appraisal instead of third-party inspections also reduces costs
- Mutual recognition and support between regional PGS groups ensures better networking for processing and marketing.
- Unlike the grower group certification system, PGS offers every farmer individual certificates, and the farmer is free to market his own produce independent of the group.

### **Limitations**

- PGS certification is only for farmers or communities that can organise and perform as a group within a village or a cluster of continuous villages.
- It is applicable only to farm activities such as crop production, processing, and livestock rearing, and off-farm processing “by PGS farmers of their direct products”.
- Individual farmers or group of farmers smaller than five members are not covered under PGS.
- They either have to opt for third party certification or join the existing PGS local group.



PGS ensures traceability until the product is in the custody of the PGS group, which makes PGS ideal for local direct sales and direct trade between producers and consumers.

**Infrastructure: Energy, Ports, Roads, Airports, Railways etc.**

Discuss the challenges and opportunities in India's domestic civil aviation sector by bringing out the recent policy interventions.

*Financialexpress*

**Why this question:**

*The question aims to comment upon the challenges and the opportunities of the domestic aviation sector in the country.*

**Key demand of the question:**

*Explain the challenges and opportunities in India's domestic civil aviation sector by bringing out the recent policy interventions.*

**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:**

*Introduce by mentioning about the current situation of civil aviation sector in India.*

**Body:**

*Explain the aspects of – the opportunities and challenges faced by the sector.*

*Importance of aviation sector and the need to provide policy support to the sector.*

*Discuss in depth the policies and various initiatives that are in place to harness the potential of aviation sector such as UDAN, Nabh Nirman etc.*

**Conclusion:**

*Conclude with way forward.*

Despite the fact that the Indian civil aviation industry is currently considered the third largest domestic civil aviation market in the world, the industry is suffering from several problems.

India's passenger traffic grew at 16.52 per cent year on year to reach 308.75 million (12.72 per cent). Domestic passenger traffic grew around 18.28 per cent to reach 243 million in 2018-19 and is expected to become 293 million in 2020. When it comes to International passengers, it grew by 10.43 per cent to reach 65 million in 2018 and traffic is expected to become 76 million in 2020. In 2018-19, domestic freight traffic stood at 1,213.06 million tonnes, while international freight traffic was at 2,143.97 million tonnes. India's domestic and international aircraft movements grew 14.40 per cent and 9.40 per cent to 1,886.63 thousand and 437.93 thousand during 2017-18. Number of commercial aircraft in India is around 550.

**Problems of aviation sector:**

- The **rupee depreciation** is hitting carriers hard. About 25-30% of their costs, excluding fuel, are dollar denominated—from aircraft lease rents and maintenance costs to ground handling and parking charges abroad.
- **Aviation turbine fuel (ATF)** prices constitute about 40% of costs for an Indian carrier and are taxed higher here than anywhere else in the world. The Centre charges 14% excise duty on ATF. The states pile on their own sales tax that can go as high as 29%.



- The **intense competition among domestic carriers**, the need to capture a slice of the ever expanding market and passenger price sensitivity makes the airlines difficult to raise ticket prices.
- The new civil aviation policy (NCAP) 2016's regional connectivity scheme doesn't help. The ticket price caps it imposes under the scheme, the fact that the viability gap funding will last only for three years and various operational issues such as the lack of slots for connecting flights at major airports are a hindrance.
- Rules such as **route dispersal guidelines (RDG)** that mandate airlines to fly a certain percentage of flights in smaller, unprofitable air routes is archaic in nature.
- The projected growth in capacity, because of plane orders, will lead to a 14% shortfall in commander pilots, a part of which will have to be fulfilled by more expensive expatriates, leading to a rise in the wage bill, the second biggest cost chunk after fuel.

### **Government Initiatives**

- Allocation to Civil Aviation Ministry has been increased to Rs 6,602.86 crore (US\$ 1,019.9 million) under Union Budget 2018-19.
- The government has launched the construction of Navi Mumbai airport which is expected to be built at a cost of US\$ 2.58 billion. The first phase of the airport will be completed by the end of 2019.
- The Government of Andhra Pradesh is planning to develop Greenfield airports in six cities- Nizamabad, Nellore, Kurnool, Ramagundam, Tadepalligudem and Kothagudem under the PPP model. Rs 15,000 crore (US \$ 2.32 billion) will be invested in 2018-19 for expanding existing terminals and constructing 15 new ones.
- Presently India has 5 PPP airports each at Mumbai, Delhi, Cochin, Hyderabad and Bengaluru, which together handle over 55 per cent of country's air traffic.
- Government of India has approved 15 Greenfield PPP projects which are expected to increase the air traffic in India. These projects would be setup in Goa, Navi Mumbai, Maharashtra, Bijapur, Gulbarga, Karnataka, Kerala, West Bengal, Madhya Pradesh, Sikkim, Puducherry and Uttar Pradesh.
- National Civil Aviation Policy, 2016 (NCAP, 2016): The policy focuses on creating safe, secure, affordable and sustainable air travel that can be accessed by the masses across India.

### **Way Forward:**

- As Indian aviation market continues to surge, focus should be ensuring adequate airport infrastructure capacity.
- The Air Navigation Services (ANS) unit of the AAI operates communication, navigation, surveillance and traffic management systems for aircraft operating in Indian airspace. With ever increasing busy airspace, it is of paramount importance to ensure that ANS can continue to provide aviation safety.





- The MRO industry in India holds great potential. It is important to ensure that the industry is regulated properly, and that the required skills are developed to service increasingly sophisticated aircraft
- More transparent ATF regime should be ensured where oil marketing companies are required to declare costs and methods used to price the end product.
- Excessive concentration of power in the DGCA should be checked to ensure proper competition and economic viability of the sector.

## Conclusion

India's aviation industry has a huge potential and offers huge growth opportunities. One of the key factors which favour such an expectation is that 40 per cent of the upwardly mobile middle class are starting to prefer air travel as the perfect mode of transport. So government must engage and collaborate with industry stakeholders to implement efficient and rational decisions that would enable the growth of India's civil aviation industry. With the right kind of infrastructure and policies with thorough focus on quality, cost and passenger interest, India would surely achieve the third-largest aviation market by 2025.

Debate on the challenges faced by the renewable energy sector in India while discussing the achievements so far. Also discuss what measures must be taken by the government to upscale India's renewable energy ambition.

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

### **Why this question:**

Recently, at the Global Climate Action Summit in New York, Prime Minister Narendra Modi, made several announcements that underscored India's commitment towards addressing pressing environmental challenges. He talked about his government's plans to curb plastic use and invited countries to join the Coalition For Disaster Resilient Infrastructure.

### **Key demand of the question:**

One must discuss the renewable energy scenario of India, challenges faced by the renewable energy sector in India while discussing the achievements made till date along with suggestions as to how should the country proceed on this front.

### **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 brief quote statistics on the renewable energy scenario of the country.

#### **Body:**

First explain that Increasing the share of non-fossil fuels in the country's energy mix is the bedrock of India's commitments under the Paris Climate Pact. The country pledged an installed electricity capacity of 175 GW by 2022 — a more than five-fold capacity increase in seven years. In the last four years, India has more than doubled its RE capacity.

Discuss the challenges associated and achievements made so far.

#### **Conclusion:**

Conclude with what should be our next step.



India imports 80 percent of its oil needs and is the third largest oil consumer in the entire world. India's energy consumption is expected to grow 4.5 percent every year for the next 25 years.

Recently due to high International Crude Oil Prices, Current Account Deficit (CAD) inflated because of higher cost of oil import, raising concerns about long term economic stability in India, highlighting importance of energy security. On account of rising CAD, Indian Rupee touched its lowest.

### **Challenges for India's Energy Security**

#### **Policy Challenges:**

Failure to attract international investment in domestic hydrocarbon exploration e.g. NELP failed to attract interest of large international energy corporations.

Major investments will have to be made to acquire hydrocarbon reserves abroad.

Coal mining in India suffers from delays due to regulatory and environmental clearances.

Indo-US nuclear helped fuel domestic power plants and give India access to critical technologies in strategic areas but deal did not lead to India setting up foreign-built reactors.

#### **Accessibility Challenge:**

The household sector is one of the largest consumers of energy in India. It is responsible for about 45% of the total primary energy use. In rural areas, biomass accounts for 90% of total primary fuel consumption for cooking. This has serious health impacts on the rural people.

Presently, 304 million Indians do not have access to electricity and around 500 million Indians are dependent on solid biomass for cooking.

#### **Infrastructure and skill related challenges:**

Lack of skilled manpower and poorly developed infrastructure for developing conventional and unconventional energy is the need of hour. India lacks transportation infrastructure for making energy accessible e.g. pipelines can be a useful way to boost the total supply of gas in the country. Gas will play a major role in Indian energy mix because it can be used effectively in several demand sectors.

#### **Economic challenges:**

Coal, oil and natural gas are the most important sources of primary energy in India. Inadequate domestic supplies of these hydrocarbons are forcing the country to increase its import bill. Rising fuel subsidies, rising CAD creates difficult conditions for economy.

#### **External Challenges:**

India's fragile energy security is under severe pressure from its rising dependence on imported oil, regulatory uncertainty, international monopolies and opaque natural gas pricing policies



India seeks to achieve its energy security through multiple partners e.g. Indo-USA nuclear deal, Oil import from Middle East etc. However, in recent times due to conflict among India's energy partners e.g. USA and Iran; India had to reduce oil import from Iran.

In wake of its difficult geographic location in South-Asia, India faces strategic challenge to meet its energy needs.

China's One Belt One Road initiative can give China definitive advantage if any conflict ensues between countries, by disturbing India's access to energy. Failure to get onboard all interested parties in IPI (Iran-Pakistan-India) gas pipeline and TAPI (Turkmenistan, Afghanistan, Pakistan and India) gas pipeline for assured supply of natural gas.

### **Measures to enhance energy security**

Increasing accessibility to clean energy:

- India has already committed to bring electricity to every household by 2022. An even more ambitious goal would be to provide electricity to all households on 24x7 basis.
- To bring clean fuel in rural areas the Pradhan Mantri Ujjawala Yojana, should be complemented by: Setting up of biomass pelletising units; and distribution of 'efficient biomass chullahs'.
- On the agricultural front, solar irrigation pump distribution target must be stepped up and financed through credit support from NABARD and government subsidy.
- The potential non-conventional energy sources must be explored and researched to make them technologically economical and accessible, like geothermal energy, tidal energy etc.

### **Enhancing efficiency:**

The National Mission for Enhanced Energy Efficiency (NMEEE) should conduct a thorough cost-benefit analysis of the available energy-efficient technologies and products across all sectors, especially agriculture, housing and transportation.

At the institutional level, the national and state designated agencies working in the area of energy efficiency should be strengthened.

To enhance vehicle fuel efficiency gains, the auto fuel quality should be upgraded to BS VI norms for nation-wide launch in 2020.

### **Policy changes:**

Around three-quarters of our power comes from coal powered plants. It is important that India increases its domestic coal to reduce its dependence on imports. There is need to fast track the regulatory clearances, improve labour productivity, increase coal production and enhance efficiency of distribution.

Hydrocarbon Exploration and Licensing Policy (HELP) intends to minimize government's discretion in decision making, reduce disputes, reduce administrative delays and introduce concept of revenue sharing, freedom of marketing to stimulate growth in the oil and gas sector in India.



The tax structure should be rationalized in import and sale of energy on thermal value basis with a view to enhance the competitiveness of the economy.

The India energy security scenarios, 2047(IESS) has been developed as an energy scenario building tool. The guiding ambition of this is to develop energy pathways leading up to the year 2047, comprising of likely energy demand and supply scenarios.

NITI Aayog launched the India Energy Security Scenarios 2047 calculator (IESS 2047), as an open source web based tool.

The tool aims to explore a range of potential future energy scenarios for India, for diverse energy demand and supply sectors leading up to 2047.

It explores India's possible energy scenarios across energy supply sectors such as solar, wind, bio fuels, oil, gas, coal and nuclear and energy demand sectors such as transport, industry, agriculture, cooking and lighting appliances. The model allows users to interactively make energy choices, and explore a range of outcomes for the country-from carbon dioxide emissions and import dependence to land use.

#### **Infrastructure:**

Refining and distribution of oil and gas needs augmentation. Thus, India should sustain its export capacity of refined products by setting up new refineries.

At present, 31 companies are developing City Gas Distribution (CGD) networks in 21 states for transportation or distribution of natural gas to consumers in domestic, commercial or industrial and transport sectors through a network of pipelines.

For the hydro projects, the government will need to make efforts to expedite progress on capacity under construction through satisfactory Rehabilitation & Resettlement implementation.

India has also built its strategic petroleum reserves in order to meet any supply shocks due to any external exigencies like wars, natural disasters etc. Indian Strategic Petroleum Reserves Ltd, a special purpose vehicle under the Oil and Gas Ministry, has constructed three strategic petroleum reserves in huge underground rock caverns at Visakhapatnam on the East Coast, and at Mangaluru and Padur on the West Coast.

These facilities, with total capacity of 5.33 million tonnes, can meet about 10 days of India's crude oil requirements. India now plans to build another 6.5 million tonnes of storage at Padur and Chandikhol in Odisha which will augment its supply to 22 days.

#### **India's Energy diplomacy:**

India is setting up a web of energy relationships in the extended neighborhood covering Myanmar, Vietnam in the east, with Central Asian countries like Kazakhstan and Gulf countries in the west.

Indo-US Nuclear deal opened new vistas for India in field of Nuclear energy facilitating cutting edge technology and nuclear fuel. India has started to engage with China, Kazakhstan and Australia for nuclear fuel.

India's SCO membership could now play a bigger role in ensuring greater energy cooperation between energy producers and consumers by linking Central Asia and South Asia.



### **Promotion of Renewable Energy**

A renewable energy capacity of 100 GW should be achieved by 2019-20 so as to contribute to achievement of 175 GW target by 2022.

Solar Energy Corporation of India Limited (SECI) should develop storage solutions within next three years to help bring down prices through demand aggregation of both household and grid scale batteries.

A large programme should be launched to tap at least 50% of the bio-gas potential in the country by supporting technology and credit support through NABARD by 2020.

### **Conclusion**

Major transformations are underway in global energy sector, from growing electrification to the expansion of renewable energy, upheavals in oil production and globalization of natural gas markets. India needs to build its capacity in research and skills building to deal with these transformations in energy sector.

Challenges like carbon emissions, air pollution, and energy access outlines different possible future scenario for the energy security. The dynamic scenarios foreseen by Indian energy security scenarios, 2047(IESS) should guide the policy makers in Energy sector. India needs to ensure long term planning to ensure universal energy access and meeting its commitment under Paris Agreement to ensure sustainable and inclusive growth.

Throw light on the significance of road development in restructuring India's infrastructure scenario. Discuss while suggesting way forward to handle the current issues.

*Livemint*

**Why this question:**

*Recently, After a robust FY19—the year preceding general elections—the pace of activity has slowed down. Year till date in FY20, a mere 500km of road projects have been awarded, raising doubts about NHAI's ability to fulfil the targeted 7,000-8,000km for the year.*

**Key demand of the question:**

*One has to discuss the significance of road development in restructuring India's infrastructure scenario.*

**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 brief narrate the importance of Road as a key transport infrastructure.*

**Body:**

*Discuss the significance of road infrastructure and its contributions to the development of the economy.*

*Explain the issues associated in road development.*

*How can these issues be addressed?*

*Suggest solutions to overcome these challenges.*

**Conclusion:**

*Conclude by suggesting suitable solutions and way ahead.*





- India's GDP growth rate slowed down to 5 per cent in Q1 of FY20 and is expected to be around 6 per cent or below in this financial year.
- As former Reserve Bank of India governor Y V Reddy mentioned recently, a combination of cyclical and structural factors have been responsible for the slowdown.
- Global uncertainties have added to the problem.
- In the last few weeks, the government has announced several measures to improve both consumption and investment in different sectors and for the economy as a whole.
- The announcement of reduction in corporate tax rates announced recently may help in reviving the sentiments of the private sector but the tax revenue may also decline and put pressure on fiscal deficit. But, these measures alone may not help in getting higher growth.

**Structural issues to be tackled-** We need to focus on three structural issues:

Physical infrastructure development, Raising human capital and Revival of rural economy for a long-term growth of 7 to 8 per cent and attaining \$5 trillion economy by 2024.

**Infrastructure Development-**

- Spending on infrastructure will have multiplier effects in the overall economy including stimulating private investment, aggregate demand and jobs.
- Construction sector was an important source of job creation during 2004-05 to 2011-12. This sector has to be revived in order to create growth and employment.
- The government seems to be fast tracking public capex, encouraging public sector enterprises (PSEs) to invest more and trying to clear the pending bills for the corporate sector and MSMEs.
- The announcement of Rs 100 lakh crore over five years for infrastructure by the government is an important measure.
- The **Vijay Kelkar committee's recommendation on PPPs** would be useful. The private sector's role is equally important.

**Raising human capital for higher growth:**

- **Health and education achievements** are essential for human capital. Yet the country's progress on both these aspects leaves much to be desired
- The Niti Aayog says that only **2.3 per cent of Indian workers have formal skill training compared to 70 to 80 per cent** in other countries.
- **Promotion of technology and knowledge economy** will add to growth. One can't have a "demographic dividend" for growth with low human capital.
- **Women's labour participation rates** have been low and declining. Raising women's human capital and participation rates can improve economic growth.
- We may also not achieve high human capital and productivity with **40 per cent of our children suffering from malnutrition.**

**Revival of rural economy:**

- **70 per cent of our population lives in rural areas** and has **stagnant incomes** and wages.
- There is a **need for revival of the rural economy** with infrastructure investment and structural reforms.
- **Agricultural marketing reforms** should be a priority.
- For better **price discovery**, agriculture has **to go beyond farming and develop value chains** comprising farming, wholesaling, warehousing, logistics, processing and retailing.
- **Agricultural exports should be promoted** with various policies. Similarly, rural infrastructure and water management are other priorities.

**Stimulus and structural reforms can raise farmers' prices** and wages and rise in demand for manufacturing and services.





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AIR 8, CSE 2014	AIR 26, CSE 2014	AIR 4, CSE 2015	AIR 14, CSE 2015	AIR 1, CSE 2016	AIR 47, CSE 2016	AIR 1, CSE 2017	AIR 2, CSE 2017	AIR 5, CSE 2018	AIR 17, CSE 2018
									
AIR 36, CSE 2014	AIR 97, CSE 2014	AIR 25, CSE 2015	AIR 35, CSE 2015	AIR 52, CSE 2016	AIR 307, CSE 2016	AIR 3, CSE 2017	AIR 9, CSE 2017	AIR 29 CSE2018	AIR 45, CSE 2018

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Science and Technology- developments and their applications and effects in everyday life; Achievements of Indians in science & technology; indigenization of technology and developing new technology.

How is Chandrayaan-2 different from Chandrayaan-1? Critically analyse its objectives and challenges. Also, discuss how it's a breakthrough in the field of space research for ISRO.

Businesstoday

**Why this question:**

The question is in the backdrop of recently executed Chandrayaan -2.

**Key demand of the question:**

One must differentiate Chandrayaan-1 and Chandrayaan-2. Discuss in detail its objectives and challenges.

**Directive:**

**Critically analyze** – When asked to analyse, 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.

**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 brief explain the context of the question.

**Body:**

The question is straight forward and there isn't much to deliberate.

Explain first the differences between the two missions and then explain the challenges faced and explain the significance of it in the field of science and technology.

Explain as well the role played by premier institutes like ISRO.

**Conclusion:**

Conclude with significance of such achievements.

Chandrayaan 2 is India's most ambitious space mission. While data from India's first lunar mission Chandrayaan 1 confirm the presence of water on the Moon without landing on the lunar surface, Chandrayaan 2 aimed to be the world's first mission to land on lunar South Pole.

Chandrayaan 1	Chandrayaan 2
<ul style="list-style-type: none"> <li>Had only Orbiter orbiting at hundred kilometres from lunar surface.</li> <li>It had 11 payloads - 5 from India, 3 from Europe, 2 from USA and 1 from Bulgaria</li> <li>Discovery of water on lunar surface mapping of chemicals and 3D topography</li> </ul>	<ul style="list-style-type: none"> <li>It has an Orbiter orbiting at hundred kilometres from lunar surface, Vikram Lander for soft landing near South Pole, Pragyan Rover.</li> <li>13 Indian payload and one passive experimental</li> <li>Expanding lunar exploration from where Chandrayaan 1 has left</li> </ul>



<ul style="list-style-type: none"> <li>• PSLV rocket was used to launch Chandrayaan 1.</li> </ul>	<ul style="list-style-type: none"> <li>• GSLV MK3 space rocket it was used to launch Chandrayaan 2</li> </ul>
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### Salient features of Chandrayaan 2 -

- In September 2008, the Chandrayaan-2 mission was approved by the government for a cost of Rs 425 crore.
- It is India's second mission to the moon.
- It aims to explore the Moon's South Polar Region.
- The mission is an important step in India's plans for planetary exploration, a program known as Planetary Science and Exploration (PLANEX).
- There are three components of the mission, an Orbiter, a lander and a rover.
- The mission payloads include — Terrain Mapping Camera which will generate a Digital Elevation Model (DEM) of the entire moon, Chandrayaan 2 Large Area Soft X-ray Spectrometer which will test the elemental composition of the Moon's surface Solar X-Ray Monitor which will provide solar X-ray spectrum inputs for CLASS.
- The Orbiter will be deployed at an altitude of 100 kilometres above the surface of the Moon. The lander will then separate from the Orbiter, and execute a soft landing on the surface of the Moon, unlike the previous mission which crash landed near the lunar south pole.
- The lander, rover and Orbiter will perform mineralogical and elemental studies of the lunar surface. The rover is named Pragyan.
- The mission's lander is named Vikram after Dr Vikram A Sarabhai, the Father of the Indian Space Programme.

### Challenges faced -

- Very short window of 2 minutes for launching the mission.
- Non usability of parachute because of absence of atmosphere.
- Russia backing off from the mission.
- Very expensive project.
- Presence of Lunar dust.
- Extreme temperatures.
- Area of South Pole has lots of craters.
- Difficulty in manual controlling of the landing because of timeline.
- Soft landing was challenging.
- Translunar injection and lunar capture.





### **Why the south polar region of the moon?**

According to ISRO, the lunar South Pole is an interesting surface area, which remains in shadow as compared to the North Pole. There is a possibility of the presence of water in permanently shadowed areas around it, the agency said, adding craters in the South Pole region have cold traps and contain fossil records of the early solar system.

### **The challenges along the way:**

Challenges involved in the moon landing are identifying trajectory accurately; taking up deep space communication; trans-lunar injection, orbiting around the moon, taking up soft landing on the moon surface, and facing extreme temperatures and vacuum.

### **Significance**

It will make India to join few allied space exploration Club of countries like USA Russia China. India would become first country to land on South Pole of the Moon. Chandrayaan 2 is a Landmark exploration step to make India a superpower and will yearn more in future exploration.

### **Challenges and Opportunities in front of India's Space Program -**

India is still a developing country with vast developmental and security concerns. In this context it is very difficult to justify the allocations for space missions that do not have a direct bearing on development.

Successful launched of MOM and a planned rover onto the moon surely boosted the Indian space program. But India's reliance on satellites has created military vulnerabilities.

An anti-satellite missile (ASAT) tested by China in 2007 has also elevated the threat of a slow-moving arms race in space. DRDO is working on development of missile defence but it is increasingly looking to partner with the United States and other countries.

China has launched satellites for Pakistan and Sri Lanka in 2011 and 2012 respectively. This space cooperation may become another path for China to make inroads in South Asian countries.

During the starting of this decade India was highly critical of the EU effort to develop a code of conduct for outer space but in last years it has been actively engaged with the United States and the EU in particular in discussing a code of conduct and other safeguarding mechanisms.

India holds the view that reliance on the integration of outer space and cyber capabilities will only increase in future conflicts. But now beyond the maritime domain, India has been relying on foreign partners for many other satellite-based communications and data services. For instance, it continues to rely on NASA for deep space communications.

Privatization may also allow India to increase its launch capacity, which is currently at four to five per year while China does on average twenty or so launches. India does not have an explicit space policy to guide private sector participation.

ISRO also has internal constraints on its capacity to deliver.

The announcement by U.S. President Donald Trump in June 2018 about the creation of a "space force" or a sixth branch of the American armed forces has worried many including India. While India is officially committed to PAROS, or the prevention of an arms race in outer space, it is yet to



formulate a credible official response to such plans. India has yet to establish a credible space command of its own.

In this context China's reaction could be much stronger than its seemingly muted official response and it does possess a formidable space military programme that far exceeds current Indian capabilities.

Globally entrepreneurs like Elon Musk and Richard Branson began talking of space activities as independent profitable commercial ventures that can be termed as New Space revolution.

Now the time has come for a more structured approach that enables better incubation for young talent in India. Fortunately, Antrix is open to such ideas. Various policies and acts need to change from being restrictive to being enabling.

ISRO's role has been immaculate in making India a global space power; however, there are many challenges and prospects in the new space age that ISRO needs to focus on.

Discuss.

*The hindu*

**Why this question:**

*The article discusses the role played by ISRO in making India a global power in the domain of space and the challenges and prospects it has for India's future space.*

**Key demand of the question:**

*One should bring out the potential of ISRO in the global space race and the challenges and prospects associated.*

**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 brief explain the context of the question.*

**Body:**

*Explain 'new space age' and mention the challenges and opportunities for ISRO. There is emergence of 'new space age' which is used to refer to a global sector of new aerospace companies and ventures working independently of governments to develop faster, better, and cheaper access to space for commercial purposes.*

*Discuss the opportunities in the new space age.*

**Conclusion:**

*With increasing competition, complexity and demand for space-related activities, there is a growing realization that national legislation is needed to ensure overall growth of the space sector. A New Space law for India should aim at facilitating growing India's share of the global space economy to 10% in the coming decade.*

The Indian Space Research Organisation (ISRO)'s success has made India to be inducted in an elite group of countries, where India is rightfully acknowledged as a space power in the world. Space technology is dual-use technology, in this feat, apart from space research; ISRO has delivered many projects serving military as well as socio-economic needs of India.

However, demand for space-based services in India is far greater than what ISRO can supply.

Therefore, private sector investment is critical, for which a suitable policy environment needs to be created.



### The potential areas and challenges for ISRO?

- Today, the value of the global space industry is estimated to be \$350 billion and is likely to exceed \$550 billion by 2025.
- Despite ISRO's impressive capabilities, India's share is estimated at \$7 billion (just 2% of the global market) covering broadband and Direct-to-Home television (accounting for two-thirds of the share), satellite imagery and navigation.
- Already, over a third of transponders used for Indian services are leased from foreign satellites and this proportion will rise as the demand grows.
- Developments in Artificial Intelligence (AI) and big data analytics have led to the emergence of 'New Space'.
- New Space entrepreneurship has emerged in India with many start-ups which seek value in exploring end-to-end services in the Business-to-Business and Business-to-Consumer segments using new space. However, these startups have yet to take off in the absence of regulatory clarity.
- So they need an enabling ecosystem, a culture of accelerators, incubators, venture capitalists and mentors that exists in cities like Bengaluru which is where most New Space start-ups have mushroomed.
- Also, the New Space start-ups discern a synergy with government's flagship programmes like Digital India, Startup India, Skill India and schemes like Smart Cities Mission.
- Another revolution underway is the small satellite revolution.
- Globally, 17,000 small satellites are expected to be launched between now and 2030.
- ISRO is developing a small satellite launch vehicle (SSLV) expected to be ready in 2019.
- It is a prime candidate, along with the proven PSLV, to be farmed out to the private sector.
- In this context, The Assembly, Integration and Testing (AIT) role, which is restricted to ISRO, must now be outsourced.
- Also years ago, ISRO launched the idea of Village Resource Centres to work in collaboration with local panchayats and NGOs but only 460 pilots have begun. Expanding this for rural areas is a formidable challenge but has the potential to transform rural India if properly conceived as a part of the India Stack and the Jan Dhan Yojana.

Further, with the Ministry of Defence now setting up a Defence Space Agency and a Defence Space Research Organization, ISRO should now actively embrace an exclusively civilian identity.

So with increasing competition, complexity and demand for space-related activities, there is a growing realization that national legislation is needed to ensure overall growth of the space sector. A New Space law for India should aim at facilitating growing India's share of the global space economy to 10% in the coming decade.

The government now has an opportunity to give priority to a new Bill that can be welcomed by the private sector, both the larger players and the start-ups alike. In any case, ISRO's hands are full with



new missions—deep space, scientific, human flight, commercial and strategic. However, to develop an aerospace industry with private investments and startups, India needs to develop a clear blueprint and also put in place a space regulatory system.

**What is clean coal technology? Do you agree that clean coal is the next silver bullet for India's carbon emission reduction after solar energy? Analyse.**

*The hindubusinessline*

**Why this question:**

*Recently Union Minister of Science & Technology inaugurated the National Centre for Clean Coal Research and Development at Indian Institute of Science (IISc)-Bengaluru.*

**Key demand of the question:**

*One has to explain the concept of clean coal technology, and also in what way it has a key role to play in India's carbon emission reduction after solar energy.*

**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:**

*Define what is Clean coal technology*

**Body:**

*Clean coal technology is a collection of technologies being developed in attempts to lessen the negative environmental impact of coal energy generation and to mitigate worldwide climate change. The term "clean coal" has been applied to many technologies, ranging from wet scrubbers, which remove sulfur dioxide from coal-generated gas, to coal washing, which removes soil and rock from coal before it's sent to a factory.*

**Conclusion:**

*Conclude that the research in clean coal domain could potentially be game changer for meeting the energy needs of the country in terms of higher efficiency and capacity at lower operating costs and size.*

Coal is by far the most abundant fossil fuel on earth. It is essentially carbon and is mainly used as a combustion fuel. Half of the world's electricity is generated by burning coal. Coal will remain a dominant energy source for years to come. Since CO<sub>2</sub> contributes to global warming, reducing its release into the atmosphere has become a major international concern.

Some 23% of primary energy needs are met by coal and 39% of electricity is generated from coal. About 70% of world steel production depends on coal feedstock. Coal is the world's most abundant and widely distributed fossil fuel source. The International Energy Agency (IEA) expects a 43% increase in its use from 2000 to 2020.

However, burning coal produces almost 14 billion tonnes of carbon dioxide each year which is released to the atmosphere, most of this being from power generation.

Development of new 'clean coal' technologies is addressing this problem so that the world's enormous resources of coal can be utilized for future generations without contributing to global warming. Much of the challenge is in commercializing the technology so that coal use remains economically competitive despite the cost of achieving low, and eventually 'near-zero', emissions. The technologies are both costly and energy-intensive.

As many coal-fired power stations approach retirement, their replacement gives much scope for 'cleaner' electricity. Alongside nuclear power and harnessing renewable energy sources, one hope for this is via 'clean coal' technologies, such as carbon capture and sequestration, also called carbon



capture and storage (both abbreviated as CCS) or carbon capture, use and storage (CCUS). It involves the geological storage of CO<sub>2</sub>, typically 2-3 km deep, as a permanent solution.

Consequently the term 'clean coal' is increasingly being used for supercritical and ultra-supercritical coal-fired plants without CCS, running at 42-48% thermal efficiency. These are also known as high-efficiency low-emission (HELE) plants. The capital cost of ultra-supercritical (USC) HELE technology is 20-30% greater than a subcritical unit, but the higher efficiency reduces emissions and fuel costs to about 75% of subcritical plants. A supercritical steam generator operates at very high temperature (about 600°C) and pressures (above 22 MPa), where liquid and gas phases of water are no longer distinct. In Japan and South Korea about 70% of coal-fired power comes from supercritical and ultra-supercritical plants.

#### **Advantages of Clean coal technology:**

- Clean coal technology seeks to reduce harsh environmental effects by using multiple technologies to clean coal and contain its emissions.
- Some clean coal technologies purify the coal before it burns. One type of coal preparation, coal washing, removes unwanted minerals by mixing crushed coal with a liquid and allowing the impurities to separate and settle.
- Other systems control the coal burn to minimize emissions of sulfur dioxide, nitrogen oxides and particulates.
- Electrostatic precipitators remove particulates that aggravate asthma and cause respiratory ailments by charging particles with an electrical field and then capturing them on collection plates.
- Gasification avoids burning coal altogether. With gasification, steam and hot pressurized air or oxygen combine with coal in a reaction that forces carbon molecules apart. The resulting syngas, a mixture of carbon monoxide and hydrogen, is then cleaned and burned in a gas turbine to make electricity.
- Wet scrubbers, or flue gas desulfurization systems, remove sulfur dioxide, a major cause of acid rain, by spraying flue gas with limestone and water.
- Low-NO<sub>x</sub> (nitrogen oxide) burners reduce the creation of nitrogen oxides, a cause of ground-level ozone, by restricting oxygen and manipulating the combustion process.

With government's efforts to push renewable energy due to international conventions on climate change, increase in carbon cess and other initiatives for lesser use of coal, there is a need for 'Vision 2030 for the coal sector', which takes into account the environmental factors such as reduction of carbon footprint, abatement of global warming. Thus in this aspect clean coal technologies are the best way forward.

**Artificial Intelligence is the new oil, the new factor of production. Like the industrial revolution, it will transform every sector. Elucidate with subsequent examples.**

[Downtoearth](#)

***Why this question:***





*Technology is the key to build a thriving, resilient world, especially in India where high mobile penetration and the government's digital initiatives can work in tandem to bring a sustainable and affordable transformation for societal needs.*

**Key demand of the question:**

*The question is straightforward and aims to discuss the importance of AI and in what way it is a revolution to be witnessed soon.*

**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:**

*In brief define AI.*

**Body:**

*Explain the evolution of AI, its significance. Discuss in what way connectivity and innovation in technology are transforming how organizations and governments operate.*

*With suitable examples explain how technology can aid development and help address issues of governance and turn it into good governance.*

*Discuss the associated concerns and challenges and in what way they can be addressed.*

**Conclusion:**

*Conclude with suitable examples and on a positive note.*

**Artificial Intelligence (AI)** - AI is the science of building computers that can solve problems the way humans do. With intelligent machines enabling high level cognitive processes like thinking, perceiving, learning, problem solving and decision making, coupled with advances in data collection and aggregation, analytics and computer processing power, AI presents opportunities to complement and supplement human intelligence and enrich the way people live and work.

- The term was coined in 1956 by John McCarthy at the Dartmouth conference, Massachusetts Institute of Technology.
- It encompasses everything from robotic process automation to actual robotics.
- Recently it has become widely popular and gained prominence due to its multifaceted application ranging from healthcare to military devices.
- AI is a constellation of technologies that enable machines to act with higher levels of intelligence and emulate the human capabilities of sense, comprehend and act.
- The natural language processing and inference engines can enable AI systems to analyse and understand the information collected.

**Applications of Artificial Intelligence (AI):**

- **Self-driving Cars:** Advances in artificial intelligence have brought us very close to making the decades-long dream of autonomous driving a reality. AI algorithms are one of the main components that enable self-driving cars to make sense of their surroundings, taking in feeds from cameras installed around the vehicle and detecting objects such as roads, traffic signs, other cars, and people.
- **Digital assistants and smart speakers:** Siri, Alexa, Cortana, and Google Assistant use artificial intelligence to transform spoken words to text and map the text to specific commands. AI helps



digital assistants make sense of different nuances in spoken language and synthesize human-like voices.

- **Translation:** For many decades, translating text between different languages was a pain point for computers. But deep learning has helped create a revolution in services such as Google Translate. To be clear, AI still has a long way to go before it masters human language, but so far, advances are spectacular.
- **Facial recognition:** Facial recognition is one of the most popular applications of artificial intelligence. It has many uses, including unlocking your phone, paying with your face, and detecting intruders in your home. But the increasing availability of facial-recognition technology has also given rise to concerns regarding privacy, security, and civil liberties.
- **Medicine:** From detecting skin cancer and analyzing X-rays and MRI scans to providing personalized health tips and managing entire healthcare systems, artificial intelligence is becoming a key enabler in healthcare and medicine. AI won't replace your doctor, but it could help to bring about better health services, especially in underprivileged areas, where AI-powered health assistants can take some of the load off the shoulders of the few general practitioners who have to serve large populations.
- **Agriculture Sector:** AI can be used to predict advisories for sowing, pest control, input control can help in ensuring increased income and providing stability for the agricultural community. Image classification tools combined with remote and local sensed data can bring a revolutionary change in utilization and efficiency of farm machinery, in areas of weed removal, early disease identification, produce harvesting and grading.
- **Business Sector:** To take care of highly repetitive tasks Robotic process automation is applied which perform faster and effortlessly than humans. Further, Machine learning algorithms are being integrated into analytics and CRM platforms to provide better customer service. Chatbots being used into the websites to provide immediate service to customers. Automation of job positions has also become a talking point among academics and IT consultancies such as Gartner and Forrester.
- **Education Sector:** AI can make some of the educational processes automated such as grading, rewarding marks etc. therefore giving educators more time. Further, it can assess students and adapt to their needs, helping them work at their own pace. AI may change where and how students learn, perhaps even replacing some teachers.
- **Financial Sector:** It can be applied to the personal finance applications and could collect personal data and provide financial advice. In fact, today software trades more than humans on the Wall Street.
- **Legal Sector:** Automation can lead to faster resolution of already pending cases by reducing the time taken while analyzing cases thus better use of time and more efficient processes.
- **Manufacturing sector:** Robots are being used for manufacturing since a long time now; however, more advanced exponential technologies have emerged such as additive manufacturing (3D Printing) which with the help of AI can revolutionize the entire manufacturing supply chain ecosystem.
- **Intelligent Robots:** Robots can perform the tasks given by a human because of sensors to detect physical data from the real world such as light, heat, temperature, movement, sound, bump, and pressure. Moreover, they have efficient processors, multiple sensors and huge memory, to exhibit intelligence. Further, they are capable of learning from their errors and therefore can adapt to the new environment.



- **Gaming:** AI has a crucial role in strategic games such as chess, poker, tic-tac-toe, etc., where the machine can think of a large number of possible positions based on heuristic knowledge.
- **Cyber Security:** In the 20th conference on e-governance in India it was discussed that AI can provide more teeth to cyber security and must be explored.
- **Smart Cities and Infrastructure:** Use of AI to monitor patronage and accordingly control associated systems such as pavement lighting, park maintenance and other operational conditions could lead to cost savings while also improving safety and accessibility.

### Conclusion

Many experts have described the rise of automation as one of the most important economic and social developments in history. The World Economic Forum (WEF) has characterized it as the fulcrum of a 4th Industrial Revolution. Moreover, the economist Andrew McAfee said, "Digital technologies are doing for human brainpower what the steam engine and related technologies did for human muscle power during the Industrial Revolution. They're allowing us to overcome many limitations rapidly and to open up new frontiers with unprecedented speed. It's a very big deal. But how exactly it will play out is uncertain."

It may cause unemployment, unease in the mindset of masses, and even social conflict at many conflicts at many reasons. In the short run, it is very difficult to predict who will get the most of the benefits however better policy guidelines, better regulations, and social security measures will essentially bring overall goodness to the society.

Awareness in the fields of IT, Space, Computers, robotics, nano-technology, bio-technology and issues relating to intellectual property rights.

What do you understand by space tourism? Discuss its origin and explain what can the space tourist look forward to and the benefits of future of flying tourists into space.

Livemint

**Why this question:**

*The question is in the context of recent endeavors made by the Indian space agency and thus the need to analyse the potential it holds in coming future.*

**Key demand of the question:**

*One needs to discuss the concept of space tourism and the potential it holds.*

**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:**

*Space tourism is human space travel for recreational purposes.*

**Body:**

*With India's latest lunar mission Chandrayaan-2 set to boldly go where no country has gone before, the Moon's south polar region, it is on course to throw open new possibilities for the world.*

*Then discuss the summary of the main driver, opportunities, challenges, current market trends and strategies impacting the global Space Tourism market.*

*Discuss the role of private sector companies, how they have evolved over the years.*

**Conclusion:**

*Conclude with potential holds in the industry and the avenues in the coming future*



Space tourism, recreational space travel, either on established government-owned vehicles such as the Russian Soyuz and the International Space Station (ISS) or on vehicles fielded by private companies. Since the flight of the world's first space tourist, American businessman Dennis Tito, on April 28, 2001, space tourism has gained new prominence

### Drivers

- Ongoing space exploration by different Agencies like ISRO, NASA etc. has cultivated huge interest in humanity for space travel
- Sci fi movies such as interstellar Gravity Martian as showcased space as an adventurous place
- First manned mission into space and astronauts who has travelled into space are considered hero in our society the placing of International Space Station has need constant human presence into to space necessary
- Ongoing advancement in science and technology is making space travel more efficient. What is example people are thinking of Mars one mission which is one way journey to the Mars and establishing human settlement there
- In developed countries the tourism business is approaching its saturation space tourism is opening a new Avenue for the business

### Benefit of space tourism

- Cost of reaching space will go down with increase in competition revenue generated from space tourism will further support space exploration and the cost will reduce in a same way the cost of air travel has reduced.
- Due to Technical Advancement and increasing use of space by human there will be use of space technology in other fields of human life such as travelling time across the globe will be reduced drastically to an hour or two by using hypersonic travel
- It will inspire new generation of Engineers
- Job creation - there are many companies that are there in space tourism business these company has not existed a few decades ago growth of space tourism will also generate more of a manufacturing job engineering job service sector job life Pilots etc
- It can give additional support to space research and development like asteroid mining
- Which space tourism chances of space getting militarized will be avoided

### Challenges

- Very steep initial cost the degree of sophistication and the technology used in space make this business very costly
- Chances of catastrophic disaster - space is a very hostile place for human survival and it does not operate in anyway any of slightest mistake can lead to great loss of life and property
- Sustainability of the business - the customer base being extremely low, the cost of travel tends to remain high throughout may cause sustainability issue



- Health effect of space travel - DNA damage bone loss muscles loss blood pressure problem are the health issues associated with space radiation and microgravity present in space
- Environmental effect- according to the study by NASA 1000 sub orbital launches releases 600 tons carbon black into stratosphere it has potential to create strong hemispheric climatic assembly pollution from this industry can also accelerate global warming and damage ozone layer
- International orders - according to outer space Treaty 1967 outer space is not subjected to National appropriation by claims of sovereignty or by means of occupation.

### Present trends

After first space tourism in 2001 as many as eight people has travelled 2 space for tourism purpose. Presently mainly private companies such as blue origin Virgin Galactic space adventure Limited Arora Space Station a Start-up form space X etc. are venturing into this business with their own ambitious projects and capital. 2010 report by Federal aviation administration predicted that space tourism can become a billion dollar market within 20 years

### Conservation, environmental pollution and degradation, environmental impact assessment

Viewing the transnational challenge of climate change through the narrow lens of nationalism will only spell more disasters. Critically analyze.

#### The hindu

#### **Why this question:**

*The article is premised on the recent incidences of Amazon forest fires and it explains in detail in what way climate change is a transnational challenge and that narrow lens of nationalism will only lead to more grave concerns.*

#### **Key demand of the question:**

*One must discuss in detail the pan- global nature of the climate change and in what way it needs to be handled with cumulative efforts of the world countries and isolated, nationalistic tendencies will only hamper and aggravate the climate change issue.*

#### **Directive:**

**Critically analyze** – When asked to analyse, 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 brief narrate the issue of climate change.*

##### **Body:**

*Explain in what way the election of Jair Bolsonaro in Brazil not only marks the rise of another populist nationalist leader on the world stage. It's also a turning point for the global politics of climate change.*

*Discuss that Mitigation policies require leaders to expend short-term political capital for long-term economic and environmental gains. However, populists have shown a particularly strong disinterest for doing so, particularly if those short-term costs would affect their prioritized group of the people. Explain with example the entire issue and what needs to be done.*

##### **Conclusion:**

*Conclude with way forward.*



Climate change is modification of global climate and weather patterns it occurs due to the changes in atmosphere and its interaction with other geological chemical or biological factors. The on-going climate change is referred as global warming. It is mainly attributed to anthropogenic activities such as use of fossil fuels as energy source and unsustainable agricultural practices like clearing of forest and use of chemicals.

#### **Scale of global warming:**

- **Rising sea level**- nearly 650 million people are threatened due to rising Sea Level Island countries like Maldives, Philippines, Samoa, Nauru, etc. may sink completely
- **Climate refugee**- sea level rise will displace large number of people in future which will intensify the present in refugee crisis in the world
- **Abnormal weather patterns**- summers and winters are becoming more extreme frequency of cyclone is increasing incidences of flood and deficient rainfall has also increased
- **Shortage of food** - with erratic and extreme weather phenomena the global food production is bound to suffer causing large-scale hunger problem.
- **Reducing ice cover** - global warming will expose peatland of tundra region means decomposition will start there that will release massive amount of carbon locked in
- **Ecosystem destruction** - rise in global city temperature has caused coral bleaching melting of ice caps in arctic sea habitat of polar bear tundra belt is also shrinking sixth major extinction is on the move

In short global warming is the greatest obstacle in attaining sustainable development goal.

#### **International Cooperation -**

- 1972 first Earth summit
- 1992 UNCED / Rio summit - Which resulted in Rio Declaration on Environment and Development, Agenda 21, Forest Principle. Legally binding agreements like CBD, UNFCCC, united nation convention to combat desertification.
- 2002 world summit on sustainable development
- 2012 united nation conference on sustainable development / Rio + 20.
- 2014 where is summit under UNFCCC
- Countries declared their INDC and India launched international solar alliance (ISA).
- Most successful example of international cooperation in handling global environment issue is Montreal protocol to tackle ozone depletion

#### **Nationalism versus climate change -**





- Developing vs. developed country - developing countries not ready to compromise on their Right to Develop. Developed countries are not adhering to Common but Differentiated Responsibility
- Lack of support from developed countries has caused developing and LDC countries to exploit globally important natural resources present with them to keep up with economic development.

**Example** - Brazil's amazon forest exploited in so unsustainable manner that previously fire resistant forest has now become prone to forest fire.

- Global economic slowdown is forcing countries to overlook environment for short term economic goal by hiding it in their nationalist propaganda.

**Example** USA has threatened to move out of Paris agreement it is planning to revive construction of keystone xl pipeline to bring carbon heavy Canadian tar sands to its refinery.

- Rising xenophobia and ultra-nationalism is preparing hard bed for climate refuses of future.

### Way forward

According to **IPCC special report 2018** - To limit global temperature rise to 1.5 degree Celsius of pre industrialisation phase, the mission cut 25% by 2030 and hundred per cent by 2075 and rapid for teaching and unprecedented change in all aspects of society will be required. Therefore, **Common but differentiated responsibility** principle must be adhered to strictly.

- Developing countries such as India and china must extend their supports for or reducing global emission
- Helping hand to IDC so that they do not land of destroying the environment for economic gain
- Changes in agricultural practices like large scale adoption of zero budget natural farming.
- All countries must extend their support to ISA to make it a real success.

### Conclusion

The real nationalism is not limited by economic gain but it extends to all aspects of society. Formation Elysium to exist earth must be saved for human survival first.

**Where does India stand on plastic waste management today? Discuss the solutions and alternatives to the plastic menace of India.**

[The hindu](#)

**Why this question:**

*The article discusses in detail the issue of plastic menace India is dealing with.*

**Key demand of the question:**

*One must explain the current state of plastic waste management in India and the urgency to tackle them. Discussion should capture the way forward to handle the issue and suggest solutions and alternatives.*

**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 brief quote facts to suggest the plastic menace the world is dealing with.*

**Body:**

*Explain in detail the issue of plastic in India, where does India stand today in terms of managing the waste produced by use of plastic.*

*Discuss various initiatives and policies taken by the govt. recently to tackle the issue.*

*What more can be done to address.*

**Conclusion:**

*Conclude with way forward.*

On August 15, in his Independence Day address, Prime Minister Narendra Modi called for a **movement to eliminate single use plastic in India**. The government is reported to be working on a ban on certain plastic items of common use such as carry bags, cutlery and plates under the Environment (Protection) Act, and this may be announced on October 2.

The Central Pollution Control Board (CPCB) **has pulled up 52 companies for not specifying a timeline or plan to collect the plastic waste** that they generate. The companies that have been pulled up include Amazon, Flipkart, Patanjali Ayurved Limited, etc.

#### Where does India stand on plastic waste?

- **Per capita consumption** of plastic is projected **to go up from 11 kg in 2014-15 to 20 kg by 2022** (Federation of Indian Chambers of Commerce and Industry data); about 43% is single use packaging with poor rates of recovery.
- In spite of the notification of the **Plastic Waste Management (PWM) Rules, 2016**, and amendments made two years later, **most cities and towns are not prepared to implement its provisions**.
- Even the **biggest Municipal Corporations** shouldering a **staggering waste burden** have **failed to implement segregation of waste**: collecting recyclable plastic, non-recyclable plastic and other waste separately for processing by material recovery facilities.
- An amendment to the PWM Rules in 2018, by which a **six month deadline** was fixed for producers to **arrange for recovery of waste in partnership with State Urban Development departments**, has made little progress.

#### Are alternatives such as compostable or biodegradable plastics available?

- Although compostable, biodegradable or even edible plastics made from various materials such as **bagasse** (the residue after extracting juice from sugarcane), **corn starch**, and **grain flour** are promoted as alternatives, these currently have **limitations of scale and cost**.
- In India in the **absence of robust testing and certification to verify claims** made by producers, **spurious biodegradable and compostable plastics** are entering the marketplace.
- In January this year, **the CPCB said that 12 companies were marketing carry bags and products marked 'compostable' without any certification**, and asked the respective State Pollution Control Boards to take action on these units.

#### What can be the possible solutions to the problem?



- **A ban on single use plastic items would have to lay down a comprehensive mechanism to certify the materials marketed as alternatives**, and the specific process required to biodegrade or compost them.
- The solutions can be **packaging innovation and upscaling waste segregation, collection and transmission**.
- **Recovering materials from garbage should be a high priority**, considering that India is the third highest consumer of materials.
- A movement against plastic waste would have to **prioritise the reduction of single use plastic** such as multilayer packaging, bread bags, food wrap, and protective packaging. Consumers often have no choice in the matter.
- **Municipal and pollution control authorities** must also be **held accountable** for the lapses.

#### Conclusion-

**Packaging** is projected to **grow into a \$72.6 billion industry in India by 2020** from about \$31 billion in 2015, with a proportionate rise in waste volumes. The **pressure on producers to streamline the collection, recycling and processing** of all forms of plastic is **bound to grow**. **Individuals and organizations** should now **actively remove plastic waste from their surroundings** and municipal bodies must arrange to collect these articles. **Startups and industries should think of newer ways of recycling**.

Coming together of global powers is vital for the design of policies against climate change. Discuss in the context of Brazil's initial refusal of international support in the Amazon fire crisis.

#### Livemint

##### **Why this question:**

*The article captures the current ongoing environmental crisis that the South American countries are facing owing to alarming Amazon forest fires.*

##### **Key demand of the question:**

*One must bring out the necessity of collective responsibility of global powers in handling such threats to the mother nature through collective policies against climate change.*

##### **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 brief explain the current scenario.*

##### **Body:**

*Explain in brief the issue of forest fires and the gravity of the situation – areas affected by the calamity, what are the causes of concern.*

*Explain How the government of Brazil has dealt with the crisis? - issues involved therein. – President Jair Bolsonaro has made things a lot worse by weakening the environment agency, attacking conservation NGOs and promoting the opening of the Amazon to mining, farming and logging. The agricultural lobby is powerful in Brazil and it has steadily eroded the protection system that was so successful from 2005-2014. Deforestation crept up in the past five years under the previous presidents Dilma Rousseff and Michel Temer. The rate has accelerated rapidly in the first eight months of current president Bolsonaro's rule.*



*Then discuss the need for collective global policy and urgent need of it.*

**Conclusion:**

*Conclude with way forward.*

Climate change is modification of global climate and weather patterns it occurs due to the changes in atmosphere and its interaction with other geological chemical or biological factors

**Scale of global warming:-**

- **Rising sea level-** nearly 650 million people are threatened due to rising sea level island countries like Maldives, Philippines, Samoa, Nauru, etc. May sink completely
- **Climate refugee-** sea level rise will displace large number of people in future which will intensify the present in refugee crisis in the world
- **Abnormal weather patterns-** summers and winters are becoming more extreme frequency of cyclone is increasing incidences of flood and deficient rainfall has also increased
- **Shortage of food** - with erratic and extreme weather phenomena the global food production is bound to suffer causing large-scale hunger problem
- **Reducing ice cover** - global warming will expose peatland of tundra region means decomposition will start there that will release massive amount of carbon locked in
- **Ecosystem destruction** - rise in global city temperature has caused coral bleaching melting of ice caps in arctic sea habitat of polar bear tundra belt is also shrinking sixth major extinction is on the move

In short global warming is the greatest obstacle in attaining sustainable development goal. Seeing the global scale of the problem coming together of global powers is vital for the design of policies against climate change.

**Amazon forest fire-**

Amazon is responsible for 20% of oxygen generation and home to 10% of world's known biodiversity. It is called Lungs of Earth. Our planet's lungs is burning, there is haze over an area equal to that of India in Amazon.

But recently Brazil had declined foreign aid for controlling the worst forest fire ever in Brazil citing the sovereignty issue over the statement by France

**Response of Brazilian government**

- At first it denied that forest fire is due to human reason
- It even denied any activity of deforestation and crime in the forest
- It is stated that 'it is unfair that use mineral resources is reserved for amazon tribes'
- Brazil wants to exploit mineral reserves present in amazon forest for this it is taking support from mining industries in USA (another climate change denier)

**Repercussions for Brazil -**

- Tarnishing Brazil's image as a green villain at international level.



- Shut down of The Amazon Fund mainly from Norway and Germany for preserving the rainforest.
- Boycott of Brazilian products by consumers around the world

### Challenges

- **Developing vs developed country** - developing countries not ready to compromise on their **Right to Develop**. Developed countries are not adhering to Common But Differentiated Responsibility
- **Lack of support from developed countries** has caused developing and LDC countries to exploit globally important natural resources present with them to keep up with economic development.
  - **Example** - Yasuni National park - Ecuador Had asked for global aid to not explore and exploit resources in NP for economic purpose, but world did not responded positively.
- **Global economic slowdown** is forcing countries to overlook environment it for short term economic goal by hiding it in there nationalist propaganda.
  - **Example** USA has threatened to move out of Paris agreement it is planning to revive construction of keystone xl pipeline to bring carbon heavy Canadian tar sands to its refinery

### Way forward

According to IPCC special report 2018

To limit global temperature rise to 1.5 degree Celsius of pre industrialisation phase, deep mission cut 25% by 2030 and hundred percent by 2075 and rapid for teaching and unprecedented change in all aspects of society will be required

Therefore,

- All countries must come together and form some International forest monitoring body on the line of international atomic energy association to look after the use of forest globally
- Funding mechanism must be kept in place to give funds to the country for maintenance and protection of their forest in the same way finance commission of India takes into account the forest cover for disbursing grants to the states
- Developed countries should extend a helping hand to needy developing countries so that they can also enjoy their right to develop without damaging the environment
- Nationalism must be replaced by globalism in matter as Global as climate change
- Common but differentiated responsibility principle must be adhered to strictly.
- Changes in agricultural practices like large scale adoption of zero budget natural farming
- All countries must extend their support to ISA to make it a real success.

### Conclusion -

Since climate change is a global issue there is a need for collective global policy to meet the sustainable development targets and preserving such large-scale ecosystem. This policy would help



agencies to prevent individual country action to destroy ecosystems & meeting emission norms & controlling global temperature rise targets.

“An effective implementation of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights Act) of 2006 is an opportunity for India to demonstrate a model of conservation where historic missteps are addressed while being strategic about the commitments to climate and biodiversity action”. Comment.

Hindustantimes

**Why this question:**

*The article discusses the implementation of Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights Act) of 2006 with respect to the environmental concerns.*

**Key demand of the question:**

*One*

**Directive:**

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

**Structure of the answer:**

**Introduction:**

*In brief narrate the provisions of the act.*

**Body:**

*Discussion should be based on the fact that while it is true that human activity has resulted in unprecedented environmental destruction as well as the extinction of species, there is also evidence of alternative paradigms where community-led forest conservation initiatives have been successful in preventing the over-exploitation of natural resources.*

*Take hints from the article and explain the challenges involved.*

*Suggest what measures are needed to be taken to handle the challenges.*

**Conclusion:**

*Conclude with way forward.*

### **Rights under the Act:**

Title rights – ownership to land that is being farmed by tribal or forest dwellers subject to a maximum of 4 hectares; ownership is only for land that is actually being cultivated by the concerned family, meaning that no new lands are granted.

Use rights – to minor forest produce (also including ownership), to grazing areas, to pastoralist routes, etc.

Relief and development rights to rehabilitate in case of illegal eviction or forced displacement; and to basic amenities subject to restrictions for forest protection. Forest management rights to protect forests and wildlife.

### **Eligibility:**

Eligibility to get rights under the Act is confined to those who “primarily reside in forests” and who depend on forests and forest land for a livelihood. Further, either the claimant must be a member of the Scheduled Tribes scheduled in that area or must have been residing in the forest for 75 years.

### **Why this law was necessary?**





What are called “forests” in Indian law often have nothing to do with actual forests. Under the Indian Forest Act, areas were often declared to be “government forests” without recording who lived in these areas, what land they were using, what uses they made of the forest and so on. 82% of Madhya forest blocks and 40% of Orissa’s reserved forests were never surveyed; similarly 60% of India’s national parks have till today not completed their process of enquiry and settlement of rights. As the Tiger Task Force of the Government of India put it, “in the name of conservation, what has been carried out is a completely illegal and unconstitutional land acquisition programme.” Hence, this was law necessary.

**Various factors that have prevented the proper implementation of the FRA since its passage in 2006 include:**

**Process of documenting communities’ claims:**

The process of documenting communities’ claims under the FRA is intensive — rough maps of community and individual claims are prepared democratically by Gram Sabhas. These are then verified on the ground with annotated evidence, before being submitted to relevant authorities.

The Gram Sabha is treated as a public authority under the FRA, and if the higher authorities under the law reject its claims, substantive reasons have to be provided for doing so. This exhaustive process is why the official diktat to implement the FRA so quickly lacks any understanding about the extent of the task and labour involved.

**Reluctance of the forest bureaucracy to give up control:**

Another main factor inhibiting the FRA’s full implementation is the reluctance of the forest bureaucracy to give up control. The forest bureaucracy has misinterpreted the FRA as an instrument to regularise encroachment. This is seen in its emphasis on recognising individual claims while ignoring collective claims — Community Forest Resource (CFR) rights as promised under the FRA — by tribal communities.

To date, the total amount of land where rights have been recognised under the FRA is just 3.13 million hectares, mostly under claims for individual occupancy rights.

**Narrow interpretation of the FRA:**

The narrow interpretation of the FRA is also to be blamed. It is against the letter and spirit of the law, which seeks to undo historical injustices and return the forests to community jurisdiction. It also contradicts the estimates for forest area collectively used by tribal and other forest communities that are provided by government agencies themselves.

**Environment Ministry’s moves:**

The Environment Ministry’s conduct also causes concern. Entrusted with stewarding our forests, it has instead concentrated great energy on how to hasten their felling (through the forest clearances it awards). In doing this, it appears that it has, among other things, mounted a prolonged effort to see if and how meaningful community participation can be eliminated from the clearance process.

**What needs to be done now?**

- The government can start by recognising the role played in the FRA’s meagre implementation by the forest bureaucracy’s resistance as well as the acute lack of awareness of FRA’s community



rights provisions in State administrations and forest communities. In almost all States, the Forest Department has either appropriated or been given effective control over the FRA's rights recognition process. This has created a situation where the officials controlling the implementation of the law often have the strongest interest in its non-implementation, especially the community forest rights provisions, which dilute or challenge the powers of the forest department.

- If the government is serious about implementing the FRA, it should confront the forest bureaucracy and make it clear that any obstruction on their part is unacceptable. The little progress that has been made in implementation so far has been due to close coordination between tribal departments, district administrations and civil society.
- There is also a clear need to strengthen the nodal tribal departments, provide clear instructions to the State and district administrations, and encourage civil society actors. Without a strong political will, this historical transformation is unlikely to take place.
- **Many states have a poor record of implementation of the act:** Bihar, Jharkhand, Himachal Pradesh, Karnataka, Kerala, Odisha, Telangana, Uttarakhand, Uttar Pradesh and West Bengal have been identified as having lagged behind in implementation of the FRA. The misuse of a law cannot be the reason to dilute it or call for its repeal. Land is a valuable resource for those who live off it and one way of ensuring lesser fragmentation is to approve community forest rights which take a long time for clearance. People are at the centre of protecting forests and conservation and if the FRA is not delivering its promise, it can be blamed squarely on the government's devious approach and its barely concealed intent to enfeeble the law.

#### Conclusion:

The implementation of the Forest Rights Act, 2006 has been opaque and there is serious lack of awareness about its provisions not only among the beneficiaries but also among the officials in charge of implementing it. Given the complaints from either side, it is time the government reviewed the law and also looked at the objections raised when it was first tabled as a bill.

**Bring out the issue of desertification in India and discuss the importance of the United Nations Convention to Combat Desertification.**

[Downtoearth](https://www.downtoearth.org.in/news/india/bring-out-the-issue-of-desertification-in-india-and-discuss-the-importance-of-the-united-nations-convention-to-combat-desertification-48111)

#### **Why this question:**

*The article talks about the significance of research that could hold the key for global land restoration effort and that there is a need for collaboration among scientists, government and farming communities, as suggested by scientists on the sidelines of United Nations Convention to Combat Desertification's (UNCCD) 14th Conference of Parties (CoP 14) going on from September 2, 2019, until September 13.*

#### **Key demand of the question:**

*One must bring out the issue of desertification in India and discuss the importance of the United Nations Convention to Combat Desertification.*

#### **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 the context of the question.*

**Body:**

*In brief explain what desertification is.*

*Then explain the role of UNCCD – It is the sole legally binding international agreement linking environment and development to sustainable land management. It is the only convention stemming from a direct recommendation of the Rio Conference's Agenda 21.*

*Explain what is the need of the hour – Responsible land governance is key to provide an enabling environment for ecosystem restoration, biodiversity protection, and land use-based adaptation and for improving the livelihoods of many small-scale farmers etc.*

**Conclusion:**

*Conclude with way forward.*

Desertification is a land degradation process in which a relatively dry land is converted into a desert. In this process land loses its water bodies as well as biodiversity (vegetation and wildlife). Desertification is the ultimate stage in land degradation process.

**Global scenario:**

- According to a UNCCD report, land degradation due to drought and desertification affects about 1.9 billion hectares of land and 1.5 billion people globally.
- According to United Nations, every year, the world loses 24 billion tons of fertile soil and dry land 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.

**Indian scenario**

- According to ISRO space application centre
- 82.6 million hectares 25% of land in India is under desertification
- 96.4 million hectares of land in India is undergoing degradation
- There is increase 1.16 million hectare under desertification in just eight years (2005-2013)
- Land Degradation caused ~\$48 billion annually to India (2% of GDP)

In India, the main reason for desertification is loss of soil cover, mainly due to rainfall and surface runoff. It is responsible for 10.98 per cent of desertification in the country. Water erosion and wind erosion are the two other main reasons in India.

**Steps by India**

- Desert Development Programme.
- Integrated Watershed Management Programme which is now subsumed under Pradhan Mantri Krishi Sinchai Yojana.
- National agriculture policy 2000
- National Mission on Green India which is a part of National Action Plan on Climate Change.



- National Afforestation Programme.
- Soil Conservation in the Catchment of River Valley Projects and Flood Prone Rivers.
- National Watershed Development Project for Rain fed Areas.
- Fodder and Feed Development Scheme - a component of Grassland Development including Grass Reserves
- Command Area Development and Management Programme.
- national water policy 2012
- National forest Policy 1988

### Role of UNCCD

- United Nation convention to combat desertification was adopted in 1994
- It was one of the three legally binding agreement put forth in 1992 Rio Earth summit
- It is the sole legally binding International agreement linking environment and development to sustainable Land management
- It is the most comprehensive Global commitment to achieve Land Degradation neutrality
- Global mechanism was established under article 21 of UN CCD specifically to assist countries in the mobilisation of financial resources to implement the convention and address desertification
- Committee on science and technology under article 24 of UN CCD to provide information and advice on scientific and technological matter relating to combating desertification to conference of party (CoP).
- UN CCD 2018-2030 framework to achieve Land Degradation neutrality by 2030 improve life of 1.3 billion people and reduce impact of drought on them

### Causes of desertification

- Overgrazing: Animal grazing is a huge problem for many areas that are starting to become desert biomes. If there are too many animals that are overgrazing in certain spots, it makes it difficult for the plants to grow back, which hurts the biome and makes it lose its former green glory.
- Deforestation: When people are looking to move into an area, or they need trees in order to make houses and do other tasks, then they are contributing to the problems related to desertification. Without the plants (especially the trees) around, the rest of the biome cannot thrive.
- Farming Practices: Some farmers do not know how to use the land effectively. They may essentially strip the land of everything that it has before moving on to another plot of land. By stripping the soil of its nutrients, desertification becomes more and more of a reality for the area that is being used for farming.
- Soil erosion: Only top soil supports vegetation, without top soil no vegetation, without vegetation land will degrade into desert.



- Urbanization and other types of land development. As mentioned above, development can cause people to go through and kill the plant life. It can also cause issues with the soil due to chemicals and other things that may harm the ground. As areas become more urbanized, there are less places for plants to grow, thus causing desertification.
- Climate Change: Climate change plays a huge role in desertification. As the days get warmer and periods of drought become more frequent, desertification becomes more and more eminent. Unless climate change is slowed down, huge areas of land will become desert; some of those areas may even become uninhabitable as time goes on.
- Stripping the land of resources. If an area of land has natural resources like natural gas, oil, or minerals, people will come in and mine it or take it out. This usually strips the soil of nutrients, which in turn kills the plant life, which in turn starts the process toward becoming a desert biome as time goes on.
- Natural Disasters: There are some cases where the land gets damaged because of natural disasters, including drought. In those cases, there isn't a lot that people can do except work to try and help rehabilitate the land after it has already been damaged by nature.

### Conclusion

More than two billion hectares of degraded land in various parts of the world can be rehabilitated. The techniques include integrated farming, 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. Further sustainable management of soil, water and biodiversity are required for protecting the land from further degradation.

**What do you understand by land degradation? Do you think restoration of degraded lands would also address water scarcity issue in the country? Discuss.**

The hindu

**Why this question:**

*In an address while hosting the COP -14 of UNCCD, prime minister Narendra Modi in his address said that this target would be achieved with an emphasis on “degraded agricultural, forest and other wastelands by adopting a landscape restoration approach.” This would also address water scarcity, enhance water recharge in forests, slow down water run-off and retain soil moisture.*

**Key demand of the question:**

*One must explain in detail clearly as to how restoration of degraded lands would also address water scarcity issue 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:**

*In brief explain the excerpts of the speech.*

**Body:**

*Explain what you understand by land degradation.*

*Highlight the status of India and land-use – India faces a severe problem of land degradation, or soil becoming unfit for cultivation. About 29% or about 96.4 million hectares are considered degraded.*

*Discuss efforts made by India to tackle the issue.*





*Most importantly explain how addressing land degradation issues will also address the issue of water scarcity.*

**Conclusion:**

*Conclude with way forward.*

Land degradation is reduction or loss of biological or economic productivity... resulting from land uses or from a process or combination of processes, including ... human activities.

**Indian scenario**

- According to ISRO's Space Application Centre
- 96.4 million hectares of land in India is undergoing degradation
- 82.6 million hectares 25% of land in India is under desertification
- There is increase 1.16 million hectare under desertification in just eight years (2005-2013)
- Land Degradation caused ~\$48 billion annually to India (2% of GDP)

In India, the main reason for desertification is loss of soil cover, mainly due to rainfall and surface runoff. It is responsible for 10.98 per cent of desertification in the country followed by vegetation degradation (8.91 percent) and wind erosion (5.55 percent).

Land degradation is a global problem largely related to agricultural use. Causes include:

- Land clearance, such as clearcutting and deforestation
- Agricultural depletion of soil nutrients through poor farming practices
- Livestock including overgrazing and over drafting
- Inappropriate irrigation and over drafting
- Urban sprawl and commercial development
- Vehicle off-roading
- Quarrying of stone, sand, ore and minerals
- Increase in field size due to economies of scale, reducing shelter for wildlife, as hedgerows and copses disappear
- Exposure of naked soil after harvesting by heavy equipment
- Monoculture, destabilizing the local ecosystem
- Dumping of non-biodegradable trash, such as plastics
- Invasive Species
- Soil degradation, e.g.
  - Soil contamination
  - Soil erosion
  - Soil acidification



- Loss of soil carbon

Land restoration includes

Restoration of vegetation - vegetation cover prevents soil erosion, it increases water run-off time thus giving time for water to percolate into earth => improves ground water level. Forest is considered as lakhs of check dams.

Restoration of soil - this in turn enhances the life support capability of the land, hence helps in restoration of vegetation.

Restoration of water bodies - this includes restoring wetlands, lake, river etc.

In reality vegetation, soil and water bodies all are inter dependent. Ultimately results in enhancement in water availability.

Thus in India where 67% of land is dry land and 30% of land is under degradation, reversing the degradation will also have potential to solve problem of water scarcity.

Mostly in southern states there is an acute shortage of water example Chennai in 2019 has declared emptying of ground water. Restoring of ground water table by using traditional and scientific water harvesting technique and conserving wetland like Pallikarini wetland will certainly bring back life to water bodies.

**Example - Revival of Alwar river in Alwar dist.** Of Rajasthan by Rajendra Singh (water man of India). He helped to build ~9000 Johads, Check dams.

India had joined "Bonn Challenge" a global effort to bring 150 million hectares of the world's deforested and degraded land into restoration by 2020, and 350 million hectares by 2030.

India pledged to bring into restoration 13 million hectares of degraded and deforested land by 2020, and an additional 8 million hectares by 2030.

At COP 14 of UNCCD India raised the Target of 21 million hectares to 26 million hectares between now and 2030, to be restored.

#### Other Steps by India

- Desert Development Programme.
- Integrated Watershed Management Programme which is now subsumed under Pradhan Mantri Krishi Sinchai Yojana.
- National agriculture policy 2000
- National Mission on Green India which is a part of National Action Plan on Climate Change.
- National Afforestation Programme.
- Soil Conservation in the Catchment of River Valley Projects and Flood Prone Rivers.
- National Watershed Development Project for Rain fed Areas.
- Fodder and Feed Development Scheme - a component of Grassland Development including Grass Reserves



- Command Area Development and Management Programme.
- National water policy 2012
- National forest Policy 1988

### Conclusion

It is land over which humans are surviving with the help of ecosystem services provided by Flora and Fauna. Degradation of land would mean degradation of human life. Water is becoming scar resource and land degradation is fueling it. Restoration of land provide us the chance to handle water scarcity problem with ease. Hence conservation efforts are necessary along with fast development and urbanisation. It is also enshrined in SDG 15. Development without sustainability is worse than on development at all.

The IPCC says total global emissions will need to fall by 45% from 2010 levels by 2030 and reach net zero by 2050. In this context, elaborate how differential carbon tax would be able to finance climate mitigation strategies across the world?

### The hindu

Climate change is a global problem, and a global problem needs a global solution. The most recent Intergovernmental Panel on Climate Change (IPCC) report suggests that we, as humankind, might have just over a decade left to limit global warming.

The IPCC says total global emissions will need to fall by 45% from 2010 levels by 2030 and reach net zero by 2050. If these targets are not met, tropical regions of the world, which are densely populated and happen to be mainly concentrated in the global South, are likely to be most negatively affected because of their low altitudes and pre-existing high temperatures. Some impact of this was already felt during the Tamil Nadu water crisis this year.

Research shows that carbon taxes effectively reduce greenhouse gas emissions. There is overwhelming agreement among economists that **carbon taxes** are the most efficient and effective way to curb climate change, with the least adverse effects on the economy.

### Benefits:

- The burden of impact is shared in a just manner among the countries
- Example - most of the carbon emission was done by countries of the north USA, China, and UK etc. But the most IMP acted are tropical countries (Samoa Maldives Congo Nigeria)
- These countries do not have enough resources to switch to green technology to get to lower the emission level
- To fulfill the emission target Global contribution will be necessary. At the same time burden of adjustment must be in proportion to contribution in Global emission.

### Advantages of having Global carbon tax:

- Countries emitting more than that of global average per capita emission will pay. The tax, countries that are emitting less than Global average will receive money from the tax paid.



- The tax paid and received will be in proportion to the distance of national per capita emission from global average per capita emission.
- Under this tax those countries that have brought down their per capita emission will also get sum from the tax pool. Example France and UK who earlier contributed much to Global emission will be in the list of 135 country who are the receivers too, because they have brought down their per capita emission.
- The tax wants the entire nation to climb down the mission ladder without necessarily having to give up on their standard of living.

### Conclusion

Global warming is a concern for survival on earth Global partnership on equitable basis is necessary to award global warming some of the method for doing this are global carbon tax on principle of Common but differential responsibility.

**“Economic diversification is imperative to cope with climate crisis”, justify the statement with suitable examples.**

[Downtoearth](#)

**Why this question:**

*The article deals in detail as to in what way climate crisis can be addressed better if economies are diversified.*

**Key demand of the question:**

*One must discuss the significance of diversification of economy and its impact on mitigating the climate crisis facing the world.*

**Directive:**

**Justify** – When you are asked to justify, 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 using suitable case studies or/ and examples.

**Structure of the answer:**

**Introduction:**

*Explain what you understand by climate crisis.*

**Body:**

*Explain that the Developing countries dependent on commodities need to diversify their economies to mitigate the increasing climate change risks and achieve the United Nations-mandated Sustainable Development Goals (SDGs), according to a new report by the UN Conference on Trade and Development (UNCTAD).*

*Explain what are the possibilities and in what way Climate crisis poses an existential threat to commodity-dependent developing countries and will result in the collapse of some economies if decisive action is not taken now.*

**Conclusion:**

*Conclude with way forward.*

**Economic diversification** is the process of shifting an economy away from a single income source toward multiple sources from a growing range of sectors and markets. Traditionally, it has been applied as a strategy to encourage positive economic growth and development.

In the context of **climate change adaptation**, it takes on a new relevance as a strategy to diversify away from vulnerable products, markets, and jobs toward income sources that are low-emission and more climate resilient.



While natural disasters like heatwaves, floods, hurricanes, rising sea levels and increase in sea surface temperature destroys agriculture, affect crop yield and fish production; extreme weather events lead to destruction of infrastructure, affecting the profitability and attractiveness of projects.

### **Impact on natural resource**

These disasters can also lead to ‘physical stranding’ of natural resources, rendering them impossible and unprofitable for use, the report said.

These would adversely affect the commodity-dependent developing countries (CDDCs), especially those who are highly dependent on these resources for their economic well-being.

Further, in the race to limit greenhouse gas emissions, some natural resources in the energy sector also face the problem of ‘regulatory stranding’. The best example is the use of coal, which is increasingly being reduced and eliminated as the primary energy source.

With renewable energy, especially solar energy, becoming cheaper, there would be a shift towards them. Thus, even without regulatory stranding, the thermal power stations would become economically unattractive, the report said.

China, the world’s largest importer of commodities, has resolved to increase the share of non-fossil fuels in the country’s primary energy consumption, as part of its commitment to climate change mitigation. This would impact the exporters of fossil fuels to China, resulting in revenue loss in export market. They would also face problems in finding alternative and profitable markets.

Angola, for example, the largest African exporter of oil to China, would be the hardest hit. In 2017, 47 per cent of its total merchandise export revenue was oil exports to China.

### **Why should the economies be diversified?**

Sectors such as tourism, agriculture, fisheries, forestry and energy production are all sensitive to the adverse effects of climate change.

The negative impacts of climate change on these sectors are of concern to all countries, especially for those whose economies are primarily driven by climate sensitive sectors. In this context it is imperative for all countries to diversify their economies either by expanding climate sensitive sectors or by promoting adaptation measures that increase resilience within the sector.

Economic diversification is one component of economic resilience and is also a key component of sustainable development as it will assist countries in reducing poverty and generate employment in the long run.

In order to eradicate extreme poverty, there needs to be an economic transformation towards sustainable development. This transformation needs to be supported institutions, incentives and investments and is an essential factor in adapting to changing conditions.

Recently, *UNDP’s supports in pursuing economic diversification strategies have been employed in a wide range of sectors. Tourism, agriculture and energy are a few examples.* These efforts are about shifting strategies to respond to emerging climate changes and to develop systems that are resilient yet sufficiently flexible that they enable people to respond to change.

### **Conclusion:**





Climate crisis poses an existential threat to commodity-dependent developing countries and will result in the collapse of some economies if decisive action is not taken now. Now, more than ever before, these countries need to assess their diversification potential and reduce their commodity dependence, which for decades has kept them exposed to volatile markets and climate change.

At a time when we are looking for traces of water in search of life on the moon, we should give greater importance to conserving water on earth. Comment on the statement with emphasis on need for a people's movement to conserve water

pib

**Why this question:**

*The question intends to discuss the urgency of water conservation through an effective people's movement.*

**Key demand of the question:**

*One must discuss the need to encourage people's movement to overcome and face the water crisis facing the country.*

**Directive:**

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

**Structure of the answer:**

**Introduction:**

*Discuss in short the looming crisis scenario of water.*

**Body:**

*Explain in what way people's participation – a Jan Andolan and holistic approaches are crucial to ensure the success of schemes and policies addressing the water crisis currently witnessing the country.*

*Suggest solutions to address the crisis, what should be the way forward, in what ways one can address the various issues leading to water scarcity.*

**Conclusion:**

*Conclude with solutions and emphasize on the need of Jal Andolan.*

Clean, fresh water is a limited resource. With all the severe droughts happening in the world, the limited supply of fresh water is becoming one of our most precious resources. Every person on earth needs water to survive. Without it, many of us would get sick and even result in death.

While almost 70% of the Earth is made up of water, many parts of the world suffer from clean water shortage. Conserving water is important because it keeps water pure and clean while protecting the environment.

Conserving water means using our water supply wisely and be responsible. As every individual depends on water for livelihood, we must learn how to keep our limited supply of water pure and away from pollution. Keeping our water supply safe and pure will protect the water for the generations to come.

### **Availability of Water in India**

- India receives an average rainfall of about 1170 mm which corresponds to an annual precipitation of about 4000 BCM (Billion Cubic Meter) including snowfall.
- However, there is considerable variation in rainfall both temporally and spatially.



- Nearly 75% of this i.e., 3000 BCM occurs during the monsoon season confined to 3 to 4 months (June to September) in a year.
- On the one side, there are surplus states like Uttar Pradesh, Himachal Pradesh and on the other side, there are water scarce states like Maharashtra, Karnataka, Tamil Nadu, Rajasthan and parts of Gujarat.
- Also, some states that are called as water abundant states like Punjab, Haryana have their own problems.
- After accounting for evaporation, the average annual water availability in the country has been assessed as 1869 BCM.
- It has been estimated that owing to topographic, hydrological and other constraints, the utilizable water is 1123 BCM which comprises of 690 BCM of surface water and 433 BCM of replenishable ground water resources.

### **Challenges of Water Management**

- Less pre-monsoon rainfall and delay in monsoon combined with unprecedented heat make it difficult to control the supply of water in the country.
- The stress on water will increase with rise in population, in that case, managing the demand for water, will become difficult.
- India is now facing a water stressed situation. Globally, the standard for water-stress situation is 1700 cubic metres of availability of water per person. India, at present, is just below that.
- India is not yet facing that situation which is globally called as water-scarcity situation.
- At the time of independence, the availability of water in the country was around 5,000 cubic metre per capita per annum, higher than what was required then. Over the time, India has failed to develop that extra availability.
- The groundwater in most of the parts of northwestern India is now available at 100 metres below the ground. With the present rate of extraction, in future, the groundwater will be available at 200 or 300 metres below the ground.
- Level of water in the reservoirs is going down. At present, the 91 reservoirs that Central Water Commission (CWC) monitors are around 19% of their life storage.
- Recently, in some states, area under water intensive crops like rice and sugarcane has increased. This is linked with the procurement and pricing policy of the government. It so happens that owing to the higher production of such crops, the government offers several benefits; this tempts other farmers as well to grow such crops, thus creating a vicious circle.
- The participation of individuals, NGOs and different communities in the water management process is quite missing.
- The role of the Jal Shakti Ministry is quite limited in handling the water crisis situation in the country until the participation of people is there for using the water prudently, for switching from the crops which are water intensive to the crops that are less water intensive.



- Due to climate change, India in the near future will witness an increase in hot spells, change in rain patterns, thus, the problem of frequent floods and frequent droughts.
- The Groundwater (Sustainable Management) Bill, 2017 drafted by the Ministry of Water Resources, River Development & Ganga Rejuvenation that provides new bases for regulating groundwater as a public resource and measures at aquifer level, has been forgotten.

#### **Steps Taken by the Government in this direction:**

- Across the country, states are taking the lead. In Rajasthan, there is a scheme called 'Mukhya Mantri Jal Swavlamban Abhiyan'. One of its objectives is to ensure effective implementation of water conservation and water harvesting related activities in rural areas.
- Maharashtra has launched a project called 'Jalyukt-Shivar', which aims to make 5000 villages free of water scarcity every year.
- The Telangana government has launched a mission called Mission Kakatiya, the objective of which is to enhance the development of agriculture based income for small and marginal farmers, by accelerating the development of minor irrigation infrastructure, strengthening community based irrigation management and adopting a comprehensive programme for restoration of tanks.
- Concerned about the water crisis in rural areas, the Prime Minister of India has recently written a personal letter to 'gram pradhans' (village chiefs) requesting them to conserve rainwater during the forthcoming monsoon.
- The Prime Minister has recently also said that the government will ensure piped drinking water to every household in the next five years. It seems to be one of the most ambitious projects that are taken in the last few decades.

#### **Interlinking the Rivers**

- The Interlinking River Project is a long term project. If one considers, the Ken-Betwa Linking project, the MoU was signed 20 years back and the groundwork on the project has not started yet.
- There always remains a lot of political opposition to the 'Interlinking the Rivers' project.
- It is so that the northern states face the situation of flood at the time of monsoon and water is required by the southern states in the dry months. Whether the project will be able to solve this problem or not is a matter of concern.
- Interlinking the rivers has its own ecological disadvantages, like in the case of the Ken-Betwa project; half of the Panna Tiger Reserve will get submerged. Also, there will be huge displacement of people. The cost involved is quite high, this raises the questions over its usefulness.
- Localized water conservation efforts, instead, is a solution. 20-25% of the water bodies, that can easily supply water to the local population, have damaged in the last 50 years. With the help of local communities, water bodies in a particular region can be easily managed.

#### **Suggestions:**



- Time has come for India; it needs a rigorous program on water efficiency as it has on energy efficiency. Just the way, India has a star-setting system for energy using appliances; it needs to have the same sort of setting for water using appliances.
- Managing the demand side of water management is crucial as India cannot increase the per capita availability of water.
- At present, the geography of water is quite different from the political geography of the country. India needs mechanisms which bring relevant people together.
- For instance, ground water, today, is the biggest single source of irrigation. It has even outweighed the surface irrigation. India has no system of coordination amongst users of the given aquifers, though it has started mapping its aquifers.
- There are countries where there is a law that states that if a number of people are sharing an aquifer, then such people must have a contract on how much each of them can draw.
- Almost all major rivers in the country are shared between the states and perhaps, it is premature to expect that the states will surrender their authority over the river basins in their respective territories. But, at least, they can come together for coordination over the river basins and sharing the relevant information. The Central Government can play a major role in bringing the states together.
- The country needs to have a specific plan for water-stressed states. There will be more efficient usage of water especially in the rural areas if the government starts charging for its water service on the lines of its electricity supply service. But the Government needs to ensure that it has the proper infrastructure to supply water to the houses.
- The government needs to encourage local participation for conserving water in the country. Hiware Bazar is a good example.
- Hiware Bazar, a village in Maharashtra's drought-prone Ahmednagar district, was sliding into an abyss after its environmental degradation. But in less than a decade it turned itself around into one of the most prosperous villages of the country. It used funds from government schemes, to regenerate its natural resources--forests, watershed and soil--led by a strong village body. The village very well manages the 300-400 millimeters (mm) of rainfall that it receives every year.
- Incentive based water conservation in rural parts in the water stressed areas is another solution, for example, if a particular level of groundwater level is maintained, higher MSP can be provided to the farmers of that region.
- Water-use efficiency in agriculture can be ensured by making farmers aware and by providing them, on the ground, technologies like the one related to water resistant crops.
- In-situ water conservation techniques like rain water harvesting, check dams need to be continued.

For the time being, there is a need to design and develop around water management. Also, water management needs to be the central focus of efforts in the agriculture sector and the environment improvement. Right water management will lead to right land management, health management and education management.



The Government needs to holistically handle the supply as well as the demand side of water management and everybody in the society, i.e. the central government, the state governments (water, being the state subject), citizens, NGOs and companies need to come together to tackle water crisis in the country.

With funding from developed nations barely a trickle, India and other developing nations must take hard calls on growth vis-a-vis climate change action. Discuss.

Financialexpress

**Why this question:**

*The article details upon the climate call made by India ahead of United Nations Climate Action Summit. It also discusses the discussion paper titled Climate Summit for Enhanced Action: A Financial Perspective from India released by the government of India.*

**Key demand of the question:**

*One has to explain the need for reinvented funding mechanisms to deal with climate change action.*

**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 brief discuss the context of the funding mechanisms presently in action for dealing with climate change.*

**Body:**

*Explain that with funding from developed nations barely a trickle, India and other developing nations must take hard calls on growth vis-a-vis climate change action. India, thus, has said that it will 'suitably recalibrate' its action only after the global stock-take of progress under the Paris Agreement takes place in 2023. While global climate negotiations have focused on the principle of common but differentiated responsibilities, and countries' respective capabilities—this acknowledges the fact that developed countries have shrunk the emissions budget for developing nations—the fact is that developed nations gave just \$38 billion in climate finance in 2016, against the \$100 billion a year by 2020 that had been agreed to in the 2009 climate negotiations.*

**Conclusion:**

*Conclude with Unless developing nations force their developed counterparts to change course, the climate agenda would fail, with devastating consequences for all.*

Climate change is certainly without argument the most serious global environmental crisis that we face. It is not the only environmental problem, but it is unique in its multi-scalar characteristic, from the global to the local. And, in many ways, it is arguably the most immediate of our problems.

At one level, for many people climate change has become an existential problem, a problem that risks undermining the conditions for productive life and therefore a problem that does not override but certainly permeates all kinds of other issues. For many others, climate change is a distant problem that is overwhelmed by more immediate issues.

With funding from developed nations barely a trickle, India and other developing nations must take hard calls on growth vis-a-vis climate change action. India, thus, has said that it will 'suitably recalibrate' its action only after the global stock-take of progress under the Paris Agreement takes place in 2023. While global climate negotiations have focused on the principle of common but differentiated responsibilities, and countries' respective capabilities—this acknowledges the fact that developed countries have shrunk the emissions budget for developing nations.



Though India is not responsible for the stock of CO<sub>2</sub> in the atmosphere, we must do far more than we are doing today to call the developed countries to account.

India contributes to only 6 or 7% of global emissions but we are one of the most vulnerable countries.

### **Adaptation and Mitigation:**

We need to start taking climate change more seriously, particularly on the adaptation side, because we really have a lot to be concerned about.

And on the mitigation side, we have to be careful as we may not be fully exploring the scope of intersections between 'a low carbon agenda' and 'a development agenda'.

India still has huge development deficits and unfortunately, the intersection between erasing development deficits and genuine climate change adaptation has been very poorly explored and the entry point for this conversation should be development deficits.

This is because 'development is the first line of defence against adaptation'.

In adaptation, our focus should therefore be on understanding what our development deficits are.

For example, to say that we need to improve, find a way for cleaner transportation, shouldn't actually lead to a conclusion that it should lead to more electric vehicles – the first priority has to be improved and more accessible public transport.

We need to understand these development deficits from a multi objective point of view, in terms of economics and access, in terms of local pollutants like air pollutants, climate change and mitigation, and liveability of cities, we need this more multi-faceted and analytical framework.

India can bring development gains and that also lead to mitigation benefits.

For example, the way we design our cities: we want more sustainable cities, we want cities with less congestion, with more public transport because we want cities that are more liveable. Those kinds of cities will also automatically be low carbon cities.

Discuss the scientific consensus on the causes and consequences of climate change and also while Science, experience and public alarm are increasingly on the side of action, the national politics in most of the countries are moving in opposite direction. Critically examine.

[The hindu](#)

[Indianexpress](#)

### **Why this question:**

*The article deals with the happenings around the recently convened global Climate Action Summit.*

### **Key demand of the question:**

*One has to analyse in detail the scientific consensus on the causes and consequences of climate change and in what way the climate diplomacy needs to be put in place and set in the right orientation.*

### **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 brief narrate the context of the question.*

#### **Body:**

*Discuss that the most scientists agree that the climate changes caused by global warming will never be completely predictable, but that they present serious risks—more extreme temperatures (hot and cold), greater storm intensity and frequency, more frequent droughts and floods, and rising sea levels—that warrant immediate efforts to reduce emissions from fossil fuels*

*Explain then what role does human activity play in the current global warming trend? What are effects of it and how should it be tackled.*

#### **Conclusion:**

*Conclude by suggesting short term and long term solutions for the same.*

This summer saw Delhi-like temperatures across southern Europe; Hurricane Dorian rendered large parts of the Bahamas unlivable; witnessed simultaneous raging fires in the Amazon, central Africa and even Siberia. Heat wave in France and Germany. Still, concentrations of carbon dioxide continue to rise. Citizen Protests: The growing evidence of climate change — scientific and experiential — has pushed the global youth into social action.

While more noticeable in the global North, young people are also mobilizing in India and other countries in the global South against inaction on climate change around the world.

These aspects could have pressurized the national politics in country into climate action but, the trend is opposite of what is required. Nationalism in multiple countries has created a short-term, look-out-for-our-own mentality to address climate change. In the United States, President Donald Trump has actively rolled back measures in the electricity sector and actions to limit methane emissions in the name of competitiveness. In Brazil, President Jair Bolsonaro has made it clear he sees environmental protections as limiting Brazilian business.

In this background, will UN Summit bring any changes?

The Secretary-General is pinning hopes on a two track approach.

Diplomatic pressure: to enhance their pledges for action made as part of the Paris Agreement. But, the response is underwhelming. Accelerating energy transition towards low-carbon energy.

#### **What does this canvas of global climate politics mean for India?**

First, that the prospects of effective global action required to address climate change are so weak is extremely bad news for India.

Second, India has the potential to show the pathway to accelerating action on climate change even while pursuing its development interests.

Third, such a domestic message would position India to be a true global climate leader, rather than a leader only among climate laggards.

#### **Conclusion:**

Make accelerated climate action congruent with an enlightened notion of national interest by focusing on key actions in rapidly changing areas such as energy and urbanization.



The increase in global temperatures and the associated natural disasters will make millions of people climate refugees. Analyse the statement in the light of recently released IPCC report on Ocean and Cryosphere and suggest the way forward.

Indianexpress

**Why this question:**

*The latest report, on Ocean and Cryosphere, is the last in a series of three that the IPCC had been asked to produce to assess the impacts of climate change on specific themes.*

**Key demand of the question:**

*The answer should bring out the highlights of the latest IPCC report and significance of the urgency to curb global warming to mitigate the effects of climate change and disasters occurring due to it.*

**Directive:**

**Analyze** – When asked to analyse, 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 brief explain how the recent report has given further strength to growing demands for more aggressive climate action from world leaders, especially those representing the big emitters.*

**Body:**

*Explain that the latest report, on Ocean and Cryosphere, is the last in a series of three that the IPCC had been asked to produce to assess the impacts of climate change on specific themes. The first of these, examining the feasibility of restricting global rise in temperatures to within 1.5°C from pre-industrial times, was submitted in October last year.*

*Discuss the highlights of the report in detail.*

*What are the issues and challenges world is facing on climate front? And what should be done to overcome?*

**Conclusion:**

*Conclude with way forward.*

Recently the Intergovernmental Panel on Climate Change (IPCC) made public ‘**The Special Report on the Ocean and Cryosphere in a Changing Climate**’ which underlined the dire changes taking place in oceans, glaciers, and ice-deposits on land and sea at the United Nations Climate Summit underway in the United States. Climate change impacts on homes and infrastructure, food and water and human health. It will bring about a forced migration on an unprecedented scale.

**Key Findings of the Report:**

- Over the 21st century, the ocean is projected to transition to unprecedented conditions with increased temperatures, further ocean acidification, marine heat waves and more frequent extreme El Niño and La Niña events.
- Ocean Warming: Global Ocean has warmed unabated since 1970 and has taken up more than 90% of the excess heat in the climate system.
- Since 1993, the rates of ocean warming and marine heat waves have very likely doubled in frequency and intensity.
- Global Mean Sea-Level: It has increased by 16 cm between 1902 and 2015, and that the rate of increase had doubled of late.



- Between 2006 and 2015, the global mean sea level recorded an average rise of 3.6 mm per year, which was more than double of 1.4 mm per year recorded in the first 90-year-period of the 20th century.
- Sea-level rise is not globally uniform and varies regionally. Regional differences, within 30 % of global mean sea-level rise, result from land ice loss and variations in ocean warming and circulation
- The Melting of Glaciers: Between 2006 and 2015, the Greenland ice sheet lost ice-mass at an average rate of 278 billion tonnes every year (e.g. Okjokull glacier of Iceland), which was enough to result in a global sea-level rise of 0.8 mm per year. During the same period, the Antarctic ice sheet lost a mass of 155 billion tonnes on an average every year.
- Snow cover outside these two poles, like the glaciers in the Himalayas, together lost an average of 220 billion tonnes of ice every year.
- The melting glaciers are the dominant source of sea-level rise, exceeding the effect of thermal expansion of ocean water (due to rising temperatures).
- Since the mid-20th century, the shrinking Cryosphere has led to predominantly negative impacts on food security, water resources, water quality, livelihoods, health, and well-being, as well as the culture of human societies, particularly for Indigenous peoples.

Climate-related displacement and migration is set to be the greatest challenge of our era. While there is a general consensus that global warming impacts us all, the role it will play in future human migration is often underestimated. Climate change disproportionately impacts developing countries, and more specifically fragile states.

Communities in arid and semi-arid lands are particularly vulnerable to the effects of climate change. Exposure to extreme temperature irregularity and rapid rainfall fluctuations makes these communities more prone to recurring drought or flooding.

### **What needs to be done?**

**Creating innovative finance mechanisms** - The current humanitarian finance system is reactive and in desperate need of reform. As humanitarian crises become more complex, the demand for funding is struggling to keep up with the supply available.

The global humanitarian funding requirement for 2019 was a record \$21.9 billion and is expected to increase further. By 2030, humanitarian assistance costs are estimated to almost double in one decade by rising to an annual rate of \$50 billion, if current trends continue.

The issue is that, as crises become more protracted, the coordinated response rate also rises. According to the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), the average UN coordinated humanitarian response rate is currently nine years – this is up from the average length of 5.2 years recorded in 2014.

With the continuation of crises, multi-year funding is needed to help close the gap. The scope for non-traditional innovative sources of finance is enormous. Creating financial solutions to reach more of those at the bottom of the pyramid would be a major contribution to addressing this pressing issue and helping build local resilience.



In the past couple of years, we have had green bonds that have been issued globally to fund climate-friendly projects and, more recently, a humanitarian impact bond that helped fund the building and operation of physical rehabilitation centres in Nigeria, Mali and the Democratic Republic of Congo. Why can't we have a financial instrument, embedded with humanitarian principles, that addresses climate-induced humanitarian problems?

**Prioritizing gender-** Climate change induced migration is adding a new layer of complexity to the area of gender, as women and girls are more vulnerable to the effects of climate change impacting education, maternal health and gender-based violence. In cases of climate change disasters, such as droughts, girls are more likely to be withdrawn from school, as women and girls are often in charge of water collection. In Africa alone, it is estimated that 17 million women and girls collect water every day.

With climate change disrupting their education, young girls are reportedly being taken out of school to marry early, creating a worryingly higher number of "child brides". The repercussions have a profoundly negative impact on a young girl's mental, physical and overall wellbeing.

As for health, 60% of all preventable maternal deaths take place in settings of conflict, displacement or natural disasters, because women and adolescent girls cannot access critical health care.

Furthermore, in situations of climate change disasters, there is clear evidence that shows an increase in sexual and gender-based violence against women and girls both during and after disasters.

The time has come to integrate a gender perspective into the climate change agenda by putting women and girls at the centre of design and decision-making. Gender-sensitive policies must be identified and prioritized to help build resilience to climate-induced disasters.

## Disaster and disaster management.

The recent Godavari boat tragedy underlines the negligence on part of various government agencies of the state of Andhra Pradesh who failed to follow the safety mandate suggested. Critically examine.

### The hindu

#### **Why this question:**

*As many as 12 people died on Sunday afternoon when a tourist boat carrying 61 persons on board capsized in the Godavari River near Devipatnam in Andhra Pradesh.*

#### **Key demand of the question:**

*The answer must address the underlying causes of the incidence and bring out the lacunae on the part of the government efforts to ensure safer travels across the river despite known possibilities and risks associated.*

#### **Directive:**

**Critically 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. 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 brief narrate the background of the incident.*

##### **Body:**



*First explain why the incident occurred.*

*What were the lacunas on part of the government – Though the boat has license, it was not yet clear whether it had the required permission to ferry tourists since all boat operations in the river have been prohibited because of the flood.*

*Explain that River Godavari has been in spate for the past few days and over 5.13 lakh cusecs of floodwater was flowing.*

*Explain that Despite frequent boat accidents in the Godavari and Krishna rivers claiming several lives, no precautionary measures are being taken to prevent them.*

**Conclusion:**

*Conclude with solutions that should be provided urgently both in short term and long term to address the situation.*

A boat capsized recently in the Godavari leaving many dead and missing. The state of Andhra Pradesh has been experiencing a familiar ring of boat tragedies in the recent past.

In the latest boat tragedy on the Godavari in which some tourists drowned and others still missing. The private operator took on board over 70 tourists who were hoping to see the scenic beauty of Papikondalu. The operator ventured into the river that has been in spate for days, without any permission.

The inexperienced crew could not cope with a sudden current of water at Kachuluru, one of the most dangerous spots enroute.

The boat tilted and capsized within minutes and only those wearing life jackets could save themselves.

The Andhra Pradesh government announced a hefty ex-gratia, promises deterrent action against all those responsible and initiates steps to prevent such tragedies.

**Facts about the past tragedies:**

- Police records show over 100 people perishing in boat mishaps during the last three years.
- The major one being on the Krishna in November 2017 when 22 tourists lost their lives.
- These tragedies were avoidable if simple precautions were in place like,
- Having only experienced crew with valid licenses,
- Provision of life jackets for all,
- Not setting out when the river is in full flow.

**Were any lessons learnt from these recurring mishaps?**

- The accident on the Krishna jolted the N. Chandrababu Naidu government into action and a committee was formed to formulate preventive steps.
- The committee highlighted the multiplicity of the departments concerned ranging from irrigation to director of ports with permitting rides and monitoring and checking illegal ones.
- It pointed to lack of coordination. Eg: When the river touches the danger mark, the irrigation department should send out a warning to all concerned not to allow any rides.
- Without a single regulatory body, the result was this typical bureaucratic phenomenon of passing the buck.



- The committee suggested making the directorate of ports as a nodal agency and the AP Inland Vessel Rules were brought into effect.

To prevent such man-made tragedies, the government must pin responsibility on officials instead of resorting to mere palliative steps.

## Linkages between development and spread of extremism.

Global Co-operation and intelligence-sharing have become quintessential to fight the new age terrorism which has global reach and sophisticated tools at its disposal.

Discuss.

[Newindianexpress](https://www.newindianexpress.com)

### **Why this question:**

*Defense minister Rajnath Singh recently suggested that bio-terrorism is among new threats facing Armed Forces, at the Medical Services of SCO countries. He called on them to find effective ways to deal with new threats posed by advancing battle field technologies.*

### **Key demand of the question:**

*The question intends to examine the changing techniques and tools of terrorism with coming of technology and rising expanse of terrorism.*

### **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 brief explain why terrorism is becoming a difficult domain to handle day by day.*

#### **Body:**

*First discuss what factors are making terrorism so dynamic – coming of newer technologies, newer techniques of warfare etc.*

*Then explain the urgency of the global community to come together to tackle the menace.*

*Quote examples such as that of bioterrorism and how one can handle the threats arising from it.*

#### **Conclusion:**

*Conclude with what actions should countries across the world should take and what should be the way ahead in future.*

With advancement in technology the nature of globalization has changed from traditional to new forms. New forms of terrorism are emerging which is acquainted with the use of new technology. New age of terrorism is spread through network of loosely connected cells and support groups.

### **Different faces of terrorism:**

- **Religious fundamentalism** - terror attacks motivated by the religion or class of Civilization theory. Example Isis are Islamic Fundamentalist
- **Biological and chemical terrorism** - includes use of Biological agent like virus bacteria fungus are chemical agents like Agent Orange etc.
- **Loan wolf attack** - using social media loan words are prepared by terror groups to attack.
- **Cyber terrorism** - large scale destruction of computer network using computer virus like stuxnet.





- Nuclear weapons and other mutually destructive weapons

#### Why new-age terrorism is difficult to fight?

- Globally spread through sleeper cells network rather than local groups
- There is no consensual definition of terrorism in the international convention to combat terrorism
- Multiplier effect and attraction of used to it apps and website that trigger religious.
- Terrorist groups are exploiting conflict zones and ungoverned territories to find new recruits.
- Pakistan occupied Kashmir is a major terror hub for Jaish-e- Mohammed.

#### Solution

- Hamburg statement in G20 summit on combating terrorism and Allianz the need for International cooperation in intelligence sharing.
- All countries should proportionately contribute to fund International investigative Agencies like Interpol
- Public private partnership- particularly with communication service provider and administration of various social media platform like WhatsApp Facebook.
- Efficient implementation of decisions of financial action task force car financing of terrorism.
- Bilateral and multilateral agreements am at sharing Intelligence and security inputs. Example India has provided security alert before the Easter bombing in Sri Lanka
- Strengthening sanitary and phytosanitary laws under WTO to prevent bioterrorism

#### Conclusion

Terrorism in developing country is a menace to the social economic and political development. Given the Global expense it can only be detected by forging anti-terrorism Alliance on a global scale.

Challenges to internal security through communication networks, role of media and social networking sites in internal security challenges, basics of cyber security; money-laundering and its prevention

What is Darknet? Are Dark Web and Deep Web one and the same? Discuss in detail the associated concerns of the same.

The hindu

**Why this question:**

*The Kerala police have set up a state-of-the-art lab complete with enabling software to intervene and crack down on the rising criminal activities over the Darknet, known as the underworld of the Internet.*

**Key demand of the question:**

*One has to clearly explain the concepts of Darknet and Deep Web. Explain in what way the two are different from each other.*

**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 brief define what is DarkNet.*

***Body:***

*Explain in detail that Dark Net is an umbrella term describing the portions of the Internet not open to public view or hidden networks whose architecture is superimposed on that of the Internet and on the contrary Deep Web is the area of the Internet which is not accessible through search engines. What can be accessed through search engines is called Surface Web.*

*Discuss in depth the concerns associated with the two.*

***Conclusion:***

*Conclude with way forward.*

- Dark Net (or Darknet) is an umbrella term describing the portions of the Internet not open to public view or hidden networks whose architecture is superimposed on that of the Internet.
- Darknet provides anonymity to the users.
- Darknet is often associated with the encrypted part of the Internet called Tor network where illicit trading takes place such as the infamous online drug bazaar.
- A variety of Darknet markets (black markets) allow for the anonymous, illegal buying and selling of drugs and other illegal or controlled substances, such as pharmaceuticals, and weapons.
- The services and websites running on the Darknet is the dark web.

#### **Are Dark Web and Deep Web one and the same?**

- Deep Web is the area of the Internet which is not accessible through search engines. What can be accessed through search engines is called Surface Web.
- To get into the Deep Web one should know the right address.
- Dark Web is part of the Deep Web.
- While the Deep Web is accessible, the Dark Web is deliberately hidden.
- While incognito mode disables browsing history and web cache, the Dark Web is shielded by specialised software.
- Since the real world money trail carries the danger of exposure, Dark Web operators transact in virtual currencies, the most popular being Bitcoins.

#### **What are the concerns involved?**

The relative impermeability of Darknet has made it a major haven for drug dealers, arms traffickers, child pornography collectors and other criminals involved in financial and physical crimes so much so that one can buy anything from tigers to hand grenades to any kind of narcotic substances, provided the potential buyer finds the right website on the Darknet.

#### **Details:**



- Kerala Cyberdome is a technological research and development Centre of Kerala Police Department conceived as a Cyber Centre of excellence in cybersecurity as well as technology augmentation for effective policing.
- The Kerala police have set up a state-of-the-art lab complete with enabling software to intervene and crack down on the rising criminal activities over the Darknet, known as the underworld of the Internet.
- A pool of four analysts has been trained and deployed in shifts for round-the-clock monitoring of Darknet.
- Since the expertise for imparting training in tracking the Darknet is limited in the country, the analysts were given 14-day training by roping in an expert from Israel.





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