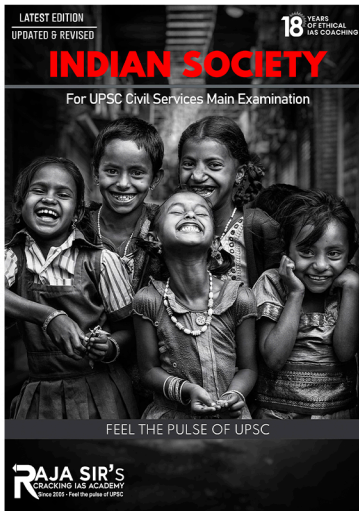


# MONTHLY GS MAINS QUESTIONS

## Answer Writing Practice



**What are the maritime security challenges in India? Discuss the organisational, technical and procedural initiatives taken to improve the maritime security (Paper 3)**

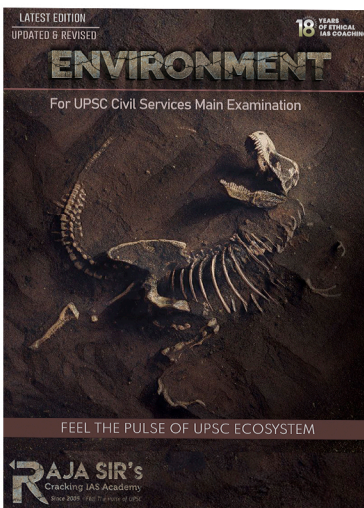
There is no common definition of maritime security in international relations. Nonetheless, the term includes issues in the maritime domain comprising national security, marine environment, .....

**What is Integrated Farming System? How is it helpful to small and marginal farmers in India? (UPSC CSE Mains 2022 - General Studies Paper 3)**

The term "Integrated Farming System" is frequently used as an integrated method of farming than monoculture methods. It is a multidimensional approach designed to manage resources sustainably and effectively for higher crop.....

**Discuss global warming and mention its effects on the global climate. Explain the control measures to bring down the level of greenhouse gases which cause global warming, in the light of the Kyoto Protocol, 1997. UPSC IAS Mains 2022 General Studies Paper 3**

Global warming is the long-term warming of the planet due to the increasing levels of greenhouse gases, such as carbon dioxide, in the atmosphere. These gases trap heat from the sun and prevent it from escaping back into space, causing the Earth's .....



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8. [Each year a large amount of plant material, cellulose, is deposited on the surface of Planet Earth. What are the natural processes this cellulose undergoes before yielding carbon dioxide, water and other end products?](#)
9. [Discuss in detail the photochemical smog emphasizing its formation, effects and mitigation. Explain the 1999 Gothenburg protocol. \(UPSC CSE Mains 2022 - General Studies Paper 3\)](#)
10. [Explain the mechanism and occurrence of cloudburst in the context of the Indian subcontinent. Discuss two recent examples. \(UPSC CSE Mains 2022 - General Studies Paper 3\)](#)
11. [Discuss the types of organised crimes. Describe the linkages between terrorists and organised crime that exist at the national and transnational levels.\(UPSC CSE Mains 2022 - General Studies Paper 3\)](#)
12. [What are the maritime security challenges in India? Discuss the organisational, technical and procedural initiatives taken to improve the maritime security. \(UPSC CSE Mains 2022 - General Studies Paper 3\)](#)
13. ["Economic growth in the recent past has been led by increase in labour productivity." Explain this statement. Suggest the growth pattern that will lead](#)

- to creation of more jobs without compromising labour productivity. (UPSC CSE Mains 2022 - General Studies Paper 3)
14. Do you think India will meet 50 percent of its energy needs from renewable energy by 2030? Justify your answer. How will the shift of subsidies from fossil fuels to renewables help achieve the above objective? Explain. (UPSC CSE Mains 2022 - General Studies Paper 3)
  15. What are the main bottlenecks in upstream and downstream process of marketing of agricultural products in India?. (UPSC CSE Mains 2022 - General Studies Paper 3)
  16. What is Integrated Farming System? How is it helpful to small and marginal farmers in India? (UPSC CSE Mains 2022 - General Studies Paper 3)
  17. Launched on 25th December, 2021, James Webb Space Telescope has been much in news since then. What are its unique features which makes it superior to its predecessor Space Telescopes? What are the key goals of this mission? What potential benefits does it hold for the human race? (Answer in 250 words). UPSC IAS Mains 2022 General Studies (Paper – 3)
  18. Discuss global warming and mention its effects on the global climate. Explain the control measures to bring down the level of greenhouse gases which cause global warming, in the light of the Kyoto Protocol, 1997. UPSC IAS Mains 2022 General Studies (Paper – 3)
  19. What is the basic principle behind vaccine development? How do vaccines work? What approaches were adopted by the Indian vaccine manufacturers to produce COVID-19 vaccines?. UPSC IAS Mains 2022 General Studies (Paper – 3)
  20. Explain the causes and effects of coastal erosion in India. What are the available coastal management techniques for combating the hazard?. UPSC IAS Mains 2022 General Studies (Paper – 3)
  21. What are the different elements of cyber security? Keeping in view the challenges in cyber security, examine the extent to which India has successfully developed a comprehensive National Cyber Security Strategy. UPSC IAS Mains 2022 General Studies (Paper – 3)
  22. Naxalism is a social, economic and developmental issue manifesting as a violent internal security threat. In this context, discuss the emerging issues and suggest a multilayered strategy to tackle the menace of Naxalism. UPSC IAS Mains 2022 General Studies (Paper – 3)
  23. Wisdom lies in knowing what to reckon with and what to overlook. An officer being engrossed with the periphery, ignoring the core issues before him, is not rare in the bureaucracy. Do you agree that such preoccupation of an administrator leads to travesty of justice to the cause of effective service delivery and good governance? Critically evaluate. UPSC IAS Mains 2022 General Studies (Paper – 4)

24. [Apart from intellectual competency and moral qualities, empathy and compassion are some of the other vital attributes that facilitate the civil servants to be more competent in tackling the crucial issues or taking critical decisions. Explain with suitable illustrations. UPSC IAS Mains 2022 General Studies \(Paper – 4\)](#)
25. [The Rules and Regulations provided to all the civil servants are same, yet there is difference in the performance. Positive minded officers are able to interpret the Rules and Regulations in favour of the case and achieve success, whereas negative minded officers are unable to achieve goals by interpreting the same Rules and Regulations against the case. Discuss with illustrations. UPSC IAS Mains 2022 General Studies \(Paper – 4\)](#)
26. [It is believed that adherence to ethics in human actions would ensure in smooth functioning of an organization/system. If so, what does ethics seek to promote in human life? How do ethical values assist in the resolution of conflict faced by him in his day-to-day functioning?. UPSC IAS Mains 2022 General Studies \(Paper – 4\)](#)
27. [What does each of the following quotations mean to you? \(a\) “Ethics is knowing the difference between what you have the right to do and what is right to do” - Potter Stewart. UPSC IAS Mains 2022 General Studies \(Paper – 4\)](#)
28. [“If a country is to be corruption free and become a nation of beautiful minds. I strongly feel that there are three key societal members who can make a difference. They are father, mother and teacher”. – APJ Abdul Kalam. UPSC IAS Mains 2022 General Studies \(Paper – 4\)](#)
29. [Judge your success by what you had to give up in order to get it”. - Dalai Lama. UPSC IAS Mains 2022 General Studies \(Paper – 4\)](#)



**How will I2U2 (India, Israel, UAE and USA) grouping transform India's position in global politics? (UPSC CSE Mains 2022 - General Studies Paper 2)**

- I2U2 stands for India, Israel, the UAE and the US. It is also referred as the 'West Asian Quad'. I2U2 was initially formed in 2021 to deal with issues concerning maritime security, infrastructure and transport.
- **Role of I2U2 to Transform India's Position in Global Politics**
  - **Ties with West Asia**
    - India will have more freedom to interact **with Israel and its Gulf partners because of I2U2 grouping.**
  - The **Abraham Accord** will help India to close the gap between Israel and the Gulf countries.
  - **Crude Oil and Defence**
    - UAE and Saudi Arabia are India's one of the **top oil exporters.** And Israel is India's **important defence partner.**
  - **Success of India's Foreign policy in West Asia**
    - India has successfully balanced its **diplomatic ties with Israel and Gulf Countries**, despite the Israel's missile attack on **Gaza Strip and West Bank.**
  - I2U2 grouping will further **deepen India's** ties with both UAE and Israel.
  - Also, it will also help India to project itself as a **strong bridge** between the Israel and Arab world.
  - **India and USA**
    - Now, India and the US have **two platforms to engage** with each other in Indo-pacific region, i.e. **QUAD and I2U2 group.**
  - It further strengthens India's role as **net security provider** in Indian Ocean Region.
  - **Food Security**
    - USD 2 billion will be invested to create a number of **Integrated Food Parks around India** along with modern climate technologies.
  - It will **aid in food insecurity** in South Asia and the Middle East.
  - **Foreign Direct Investment (FDI)**
    - It is a boost to Comprehensive Economic Partnership Agreement signed between India & UAE, which is the highest contributor of FDI to India from Gulf.
  - **Clean Energy**

- **A hybrid renewable energy project of wind and solar power** along with battery energy storage technology, will be established in Gujarat.
- It will **reduce the energy scarcity in South Asia** through grid network.
- The I2U2 group makes lot of sense in West Asia and South Asia geopolitics. For India, it leverages its good relations with Israel, the Gulf and the USA to further build economic and diplomatic relations. But there is need for confidence building measures between Israel and Arab world as both of them don't trust each other. Here, India can act as a communication channel to build trust among Israel and Arab world.

**Clean energy is the order of the day.' Describe briefly India's changing policy towards climate change in various international fora in the context of geopolitics.(UPSC CSE Mains 2022 - General Studies Paper 2)**

India has been actively participating in various international fora to address the issue of climate change. Over the years, India's policy towards climate change has evolved, reflecting changing geopolitical circumstances and the country's own development priorities. In this answer, we will describe India's changing policy towards climate change in various international fora in the context of geopolitics.

- **Paris Agreement:** In 2015, India played a significant role in the negotiation of the Paris Agreement, which aims to limit global warming to below 2 degrees Celsius. India's position was influenced by its development needs and the need to balance economic growth with environmental concerns. India committed to reducing the emissions intensity of its GDP by 33-35% by 2030 from 2005 levels and to achieve 40% of its electricity generation from non-fossil fuel sources by 2030.
- India's commitment to renewable energy has also been demonstrated through initiatives like the International Solar Alliance (ISA) and the Coalition for Disaster Resilient Infrastructure (CDRI).
- India has been an active participant in the G20 discussions on climate change, which bring together the world's largest economies to address global issues. In 2020, India emphasized the need for a balanced approach to climate action that takes into account the different development stages and priorities of different countries. India also highlighted the need for developed countries to provide financial and technological support to developing countries to facilitate their transition to clean energy.

- India has been a party to the United Nations Framework Convention on Climate Change (UNFCCC) since its inception and has actively participated in its various conferences. India has consistently emphasized the principle of common but differentiated responsibilities and respective capabilities (CBDR-RC), which recognizes that developed countries have historically contributed the most to greenhouse gas emissions and have a greater responsibility to address climate change. India has also advocated for greater financial and technological support for developing countries to enable them to transition to clean energy and adapt to the impacts of climate change.
- India's policy towards climate change is also influenced by geopolitical considerations, including its relations with major powers like the United States and China. India has been working with the United States on initiatives like the US-India Climate and Clean Energy Agenda 2030 Partnership, which aims to strengthen cooperation on clean energy and climate change.
- India's relations with China, on the other hand, have been strained over issues like border disputes and trade, which has impacted cooperation on climate change.
- India has been cautious about China's Belt and Road Initiative, which includes several coal-based power projects that could contribute to greenhouse gas emissions.

India's changing policy towards climate change in various international fora reflects the country's evolving development priorities and geopolitical considerations. While India has committed to transitioning to clean energy, it has emphasized the need for a balanced approach that takes into account the different development stages and priorities of different countries. India has also advocated for greater financial and technological support for developing countries to enable them to transition to clean energy and adapt to the impacts of climate change.

**Why is Public Private Partnership (PPP) required in infrastructural projects?  
Examine the role of PPP model in the redevelopment of Railway Stations in  
India. (UPSC CSE Mains 2022 - General Studies Paper 3)**

Public-private partnerships (PPPs) are formally established agreements between public and private parties to share risks and benefits in the provision of public services and infrastructure.

**Role of PPP model in the redevelopment of Railway Stations in India**

- The station redevelopment comprises two components:
  - **Mandatory station redevelopment:** It will make smooth and hassle-free travel.
  - **Station Estate (Commercial) development:** It will enable to tap several revenue streams to ensure the viability of entire project.
- The Government of India pushing for reforms in railway infrastructure with the help of PPP. The first station redeveloped through PPP process is Gandhinagar in Gujarat.
- Other stations will be redeveloped such as New Delhi, Chhatrapati Shivaji Maharaj Terminus and many more including in tier 2 and tier 3 cities.
- The responsibility of train operations and safety certification rests with Indian Railways.

PPPs offer the public sector potential cost, quality, and scale advantages in achieving infrastructure service targets. NITI Aayog strategy for new India @ 75 envisages many targets in railway infrastructure like increasing the speed of infrastructure from the present 7 km/day to 19 km/day, 100% electrification of broad-gauge track by 2022-23.

- Developing railways not as a service, but as an asset: Station redevelopment is planned by leveraging the real estate potential of separable land and air space in and around the stations, through private participation. These redeveloped hubs will be called "Railopolis." • Bibek Debroy Committee on the projected rebuilding of Indian Railways (IR) has urged private sector task investment and the establishment of a free controller to promote competition.

**Looking ahead**

Vijay Kelkar Committee Report on Revisiting and Revitalising PPP Mode should also be considered.

Proposed reforms:

- A PPP statute that provides implementing executives with a strong framework.
- IPRC (Infrastructure PPP Project Review Committee), which assesses strained PPP projects.



- Swiss challenge method: used to thwart unsolicited bids while granting contracts.

The Indian Railways is just one example of how PPP can speed up infrastructure construction. To unlock innovation's richness of benefits and reach the target of a \$5 trillion economy by 2024, it will be necessary to support it and learn from people around the world.

**Is inclusive growth possible under market economy? State the significance of financial inclusion in achieving economic growth in India.(UPSC CSE Mains 2022 - General Studies Paper 3)**

- The concept of inclusive growth is based on the idea that economic growth should be broad-based and inclusive, and not limited to a select few individuals or groups. It emphasizes the importance of creating opportunities and access to resources for all members of society, particularly those who are traditionally marginalized or excluded from economic activities. Inclusive growth is necessary to reduce poverty, inequality, and social exclusion and promote sustainable and long-term economic growth.
- Market economies are based on the principles of supply and demand, where the market determines the allocation of resources. While market economies have the potential to generate economic growth and create wealth, they are also characterized by inequality and social exclusion. The benefits of economic growth are not distributed equally, and certain segments of society may be left behind. This is particularly true for marginalized groups such as women, minorities, and low-income households.
- However, it is possible to achieve inclusive growth in a market economy by implementing policies and strategies that promote access to resources and opportunities for all members of society. For example, policies that focus on improving education, healthcare, and infrastructure can help create a more inclusive economy. Additionally, policies that promote entrepreneurship and innovation can help create new opportunities for marginalized groups and reduce barriers to entry.
- Financial inclusion is a critical component of inclusive growth, particularly in developing economies such as India. Financial inclusion refers to the process of providing access to financial services to all members of society, particularly those who are traditionally excluded from the formal financial sector. Financial inclusion can help reduce poverty, increase economic growth, and promote social inclusion.

- In India, financial inclusion has become a key priority for policymakers in recent years. The government has launched several initiatives to promote financial inclusion, including the Pradhan Mantri Jan Dhan Yojana (PMJDY), which aims to provide access to financial services to all households in the country. The PMJDY has been successful in reaching millions of unbanked households and has helped promote financial inclusion in the country.
- Financial inclusion can have a significant impact on economic growth in India. By providing access to financial services, particularly credit, financial inclusion can help promote entrepreneurship and innovation, which are critical drivers of economic growth. Additionally, financial inclusion can help reduce poverty and improve the standard of living for marginalized groups.
- However, achieving financial inclusion is not without its challenges. One of the key challenges is the lack of access to formal financial institutions in rural and remote areas. Many marginalized groups, particularly those living in rural areas, do not have access to formal financial institutions such as banks and insurance companies. This limits their ability to access financial services and can perpetuate poverty and exclusion. Another challenge is the lack of financial literacy among marginalized groups. Many individuals, particularly those who are not well-educated or do not have access to formal financial institutions, may not understand how financial services work or how to use them effectively. This can limit their ability to take advantage of financial services and can lead to financial insecurity. To address these challenges, policymakers in India must focus on developing innovative solutions that promote financial inclusion. For example, mobile banking and digital payment systems can help reach marginalized groups in remote areas and provide access to financial services.

**What are the major challenges of Public Distribution System (PDS) in India? How can it be made effective and transparent?. (UPSC CSE Mains 2022 - General Studies Paper 3)**

The Public distribution system (PDS) is an Indian food security system established under the Ministry of Consumer Affairs, Food, and Public Distribution. PDS is operated under the joint responsibility of the central and the state governments.

### **Major challenges of Public Distribution System**

#### **Procurement**

- **Open-ended Procurement:** All incoming grains accepted even if buffer stock is filled creating a shortage in the open market.

- The recent implementation of Nation food security act would only increase the quantum of procurement resulting in higher prices for grains.
- The gap between required and existing storage capacity.
- The provision of minimum support price has encouraged farmers to divert land from production of coarse grains that are consumed by poor, to rice and wheat.

### **Storage**

- **CAG audits** have time and again highlighted the Inadequate storage capacity with FCI.
- Food grains rotting or damaging on the CAP or Cover & Plinth storage.
- The storage of foodgrains inculcates high carrying costs on the government.

### **Allocation of food grains**

- **Identification of beneficiaries:**
  - Identification of beneficiaries by the states is not fool proof.
  - Lots of errors occur in exclusion and inclusion of Below Poverty Line (BPL) and Above Poverty Line (APL) families in beneficiary data.
  - The problem of targeting is compounded by the lack of good quality regular data; no regular official estimates of the actual income of households.
  - The true beneficiaries are not getting food grains while those that are ineligible are getting undue benefits.
  - The high prevalence of **ghost cards**, made in the name of non-existent people in several states indicates that grains are diverted from deserving households into the open market.
- **Illicit Fair Price shops:**
  - Part of this leakage occurs at the level of the fair price shops, where some store owners exchange the high-quality goods provided from the government for distribution through the PDS with lesser quality goods from the general stores..

### **Transportation**

- **Leakage and diversion of food grains** during transportation.
- **Uneven spread of Food production, procurement and distribution.** For example: north eastern states are very far from Punjab and Haryana, from where wheat is procured. To transport food grains from Punjab to far flung areas in North east will entail cost and time both.

### **Other issues**

- Many times, good quality food grains are replaced with poor quality cheap food grains.
- Public distribution system includes only few food grains such as wheat and rice, it does not fulfil the requirement of complete nutrition.

- Fair Price Shop owner gets fake Ration cards and sell the food grains in the open market.

### **PDS Reforms**

- **Role of Aadhar:** Integrating Aadhar with TPDS will help in better identification of beneficiaries and **address the problem of inclusion and exclusion errors.** According to a study by the Unique Identification Authority of India, using Aadhaar with TPDS would help eliminate duplicate and ghost (fake) beneficiaries, and make identification of beneficiaries more accurate.
- **Technology-based reforms of TPDS implemented by states: Wadhwa Committee,** appointed by the Supreme court, found that certain states had implemented computerisation and other technology-based reforms to TPDS. Technology-based reforms helped plug leakages of food grains during TPDS.
  - Tamil Nadu implements a **universal PDS**, such that every household is entitled to subsidised food grains.
  - States such as Chhattisgarh and Madhya Pradesh have implemented IT measures to streamline TPDS, through the digitisation of ration cards, the use of GPS tracking of delivery, and the use of SMS based monitoring by citizens.

### ***Technology-based reforms to TPDS undertaken by some states***

<b>Type of reform</b>	<b>Benefits of reform</b>	<b>States implementing reforms</b>
Digitisation of ration cards	§ Allows for online entry and verification of beneficiary data § Online storing of monthly entitlement of beneficiaries, number of dependants, offtake of food grains by beneficiaries from FPS, etc.	Andhra Pradesh, Chhattisgarh, Tamil Nadu, Madhya Pradesh, Karnataka, Gujarat, etc.
Computerised allocation to FPS	§ Computerises FPS allocation, declaration of stock balance, web-based truck challans, etc. § Allows for quick and efficient tracking of transactions	Chhattisgarh, Delhi, Madhya Pradesh, Tamil Nadu, etc.



Issue of smart cards in place of ration cards	<p>§ Secure electronic devices used to store beneficiary data</p> <p>§ Stores data such as name, address, biometrics, BPL/APL category and monthly entitlement of beneficiaries and family members</p> <p>§ Prevents counterfeiting</p>	Haryana, Andhra Pradesh, Odisha etc.
Use of GPS technology	<p>§ Use of Global Positioning System (GPS) technology to track movement of trucks carrying food grains from state depots to FPS</p>	Chhattisgarh, Tamil Nadu
SMS based monitoring	<p>§ Allows monitoring by citizens so they can register their mobile numbers and send/receive SMS alerts during dispatch and arrival of TPDS commodities</p>	Chhattisgarh, Uttar Pradesh, Tamil Nadu
Use of web-based citizens" portal	<p>§ Publicises grievance redressal machinery, such as toll free number for call centres to register complaints or suggestions</p>	Chhattisgarh

PDS is one of the biggest welfare programmes of the government. Strengthening of the existing TPDS system by capacity building and training of the implementing authorities along with efforts to plug leakages is the best way forward.

**Elaborate the scope and significance of the food processing industry in India. (UPSC CSE Mains 2022 - General Studies Paper 3)**

- **Food Processing** includes process under which any raw product of agriculture, dairy, animal husbandry, meat, poultry or fishing is transformed through a process (involving employees, power, machines or money) in such a way that its original physical properties undergo a change and the transformed product has commercial value and is suitable for human and animal consumption.
- It also includes the **process of value addition** to produce products through methods such as preservation, addition of food additives, drying etc. with a view to preserve food substances in an effective manner, enhance their shelf life and quality.

- Food processing industries adopt a unique procedure to increase the shelf-life of food products by processing them with chemical reagents and preservatives. Also, these industries blend different food products to form a new food product, for example, food processing industries make sauces by blending tomatoes, with different salts, oils, and spices. Also, **some preservative chemicals like citric acid, salt, vinegar, butylated hydroxy toluene (BHT), butylated hydroxy anisole (BHA), calcium propionate, etc. are used by FPI** to increase the shelf life of the existing food products.

### **Significance of Food Processing Industries**

1. **India is an agriculturally prosperous nation and more than 50% of its population is employed in the agricultural sector.** Thus India has a surplus amount of raw materials for food processing industries. In 2018-19 the total production of Horticulture products in India was 313.85 million tons.
2. With the help of food processing industries, India easily processes raw products into processed foods.
3. As the agricultural sector is the major contributor to the Indian economy all the related sector like the food processing industry helps in creating employment and simultaneously benefit the economy of the country. **According to the Food Processing Minister in 2020-21, the food processing industry contributes 12.8% to India's GDP.**
4. Food processing is the next step in sustainable development as processed foods are less likely to get rotten thus reducing food wastage.
5. Due to its longer shelf life, processed food can be smoothly exported to different parts of the world.

**India holds the sixth-largest food and grocery market in the world with 70% of retail sales.**

### **Scope of Food Processing Industries in India**

In India, there is a great scope of food processing industries and for this reason, **during the period March 2017 to April 2000 India has received around USD 7.54 billion worth of FDI in the food processing sector.**

- Globally India holds the number 1 ranking in producing some of the major products like mango, papaya, banana, milk, ginger, guava, etc. Also, India is a mass producer of sugar, cashew nuts, potato, rice, wheat, etc.
- Apart from food products India also produces a significant amount of coffee and tobacco every year.
- Spices are among one of the most exported food products of India. With the help of FPIs India is making processed spices that can easily be transported with a shelf life of more than a year. As per the data of IBEF (India Brand Equity Foundation), India exported spices worth US\$ 4 billion in the financial year 2021.

- The diverse climatic condition and availability of different kinds of soil help India produce different kinds of food throughout the year. Additionally, the numerous sea coasts, rivers, and lakes cater to the supply of non-vegetarian food items.
- Establishing FPIs in rural areas of India provides a significant amount of resources at the same place along with cheap labor. Thus, **from 2014 to 2015 the Government of India issued a fund of Rs. 2000 crore via NABARD to support the Food processing Industries and Food parks.**
- With the help of the Food processing industries (FPI), Indian farmers will be able to directly sell their crops to the industry for better output.
- The demand for food items is significantly increasing with the increased population and thus more FPIs are needed to meet the demand.
- The Government of India is making significant efforts for the enhancement of FPIs in India and thus many investments in FPIs can prove to be quite profitable.

#### Additional Information (Not needed for answer)

#### Location of Food processing industries (FPI) in India

The food processing industries are divided into many segments like grain processing, meat and poultry, fruits, and vegetables, marine products, consumer foods, etc. However, all these food items are produced in FPIs located in different regions of India like Gujarat, Maharashtra, Andhra Pradesh, Kerala, Punjab, Uttar Pradesh, and West Bengal. The FPIs in India are mainly located along with the coastal states because of the raw material availability and ease of transportation.

**As per the ASI (Annual survey of India) and data presented by the Ministry of Food Processing there are around 37,175 registered processing industries across India**

#### Major Challenges to FPI in India

- **Climatic Condition:** It is often seen that due to bad weather many farmers in India lose their crops every year thus resulting in a short supply of raw materials for the food processing industries.
- **Lack of technology:** There is still a need for advanced technology to be adopted in food processing industries to make it more efficient.
- **Infrastructure:** Due to poor infrastructure it becomes difficult to transport food items from one place to another.
- **Food Standards:** Every nation has its food standards for consumable food items and thus, the food processing industries must satisfy all these food standards. However, there are not enough laboratories in India to check these food items as per the standards.

#### Government's initiatives to Promote FPI

- The ministry of food processing launched a scheme called **National Mission on Food Processing** in April 2012 that was sponsored by the central government. Under this scheme, the main was to establish more food processing industries in India and proper supervision and monitoring of the existing ones.
- Under the **vision 2015 for food processing**, the Government of India is conducting a study on the growth of food processing industries in India. Its main aim is to enhance the existing food processing industries and expand production capacity by establishing new ones.
- The **mega food park scheme** of GOI can prove to be game-changing as it aims to directly connect the farmers with industries via mega food parks.
- The government is focusing on developing **Agri Export Zones (AEZs)** and under this scheme, many cities like Ahmedabad, Anand, Vadodara, Surat, Jamnagar, etc. have been converted into Agri-export zones. This zone caters export facilities of the food processing industries in India **by strengthening the overall backward linkages with a market-oriented approach and it also helps to create healthy competitiveness abroad as well as in the domestic market.** Recently, in various places in India, the Government has sanctioned 60 AEZs comprising about 40 agricultural commodities.

**The increase in life expectancy in the country has led to newer health challenges in the community. What are those challenges and what steps need to be taken to meet them?. (UPSC CSE Mains 2022 - General Studies Paper 3)**

India's progress in improving the lives of its citizens can be seen in a single statistic, namely, the increase in life expectancy at birth. As per UNDESA, by 2010-15, life expectancy in India (67.5 years) had almost caught up with the global average of 70.5 years.

### **Challenges due to increased Life Expectancy**

- **Changing Healthcare Needs:** In a demographic where the growth rate of elders far exceeds that of the young, the biggest challenge is to **provide a range of quality, affordable, and accessible health** and care services to the elderly.
  - They require an array of **specialised medical services at home including tele or home consultations, physiotherapy and rehabilitation services**, mental health counselling and treatment, as well as pharmaceutical and diagnostic services.
- **Low HAQ Score of India:** As per the **2016 Healthcare Access and Quality Index**, India (at 2) is still **significantly below the global average of 54 points**, ranking 145 out of 195 countries.



- The low HAQ **worsens even further in smaller cities and rural areas** where basic quality health-care services are very inadequate.
- **Social Issues:** Factors such as **familial neglect, low education levels, socio-cultural beliefs and stigma**, low trust on institutionalised health-care services etc. exacerbate the situation for the elders.
  - Inequity in access to facilities compounds the problems for the elderly, who are already, physically, financially and at times psychologically restricted in understanding, and availing such facilities. Consequently, **most of them live their years in neglect.**
- **Vicious Cycle of Health, Economy and Unproductivity:** An overwhelming proportion of the elders are from the lower socio-economic strata.
  - The vicious cycle of poor health and unaffordable health costs is further accelerated by their inability to earn a livelihood.
  - As a result, not only are they economically unproductive **but it also adds to their mental and emotional problems.**
- **Inadequate Welfare Schemes:** Despite **Ayushman Bharat** and public health insurance schemes, a **NITI Aayog** report indicates that 400 million Indians do not have any financial cover for health expenses.
  - Despite the presence of pension schemes at centre and state level, a mere **pittance as low as ₹350 to ₹400 a month is provided** in some states which too is **not universal.**
- **Challenges to Inclusion of Elderly in the Economy:** In order to include the elderly as active participants in the economy, they need to be reskilled and taught about the latest technologies to bring them at par with the current 'tech-savvy' generation.
  - Ensuring proper technology, human resource and other facilities for **reskilling the elderly population at a large scale is a challenge.**

### Looking ahead

- **Health Related 'Elderly-First' Approach:** In the **Covid-19 vaccination strategy**, the seniors-first approach led to over 73% of elderly population receiving at least one dose and around 40% being doubly vaccinated by October 2021.
  - Considering the demographic trends, India should **reimagine its entire health-care policy** for the next few decades, **with an elderly prioritised approach.**
  - As senior citizens require the most diverse array of health-care services, the creation of adequate services for them will benefit all other age-groups.

- **Role of Government:** India needs to rapidly **increase its public health-care spending**, and invest heavily in the **creation of well-equipped and staffed medical care facilities** and **home health-care** and rehabilitation services.
  - It needs to accelerate implementation of programmes such as the **National Programme for Health Care of the Elderly (NPHCE)**.
  - The Ayushman Bharat and **PM-JAY ecosystems need to be further expanded** and similar, special health-care coverage schemes and services need to be created for senior citizens from the lower economic strata.
- **Socio-Economic Inclusion of Elderly:** Similar to countries like in Europe which have small communities to take care of the elderly and provide them related facilities, **India can build such a type of youth army to help elderly in the far away areas.**
  - The best way of taking the best economic and social advantage of the elderly is not to treat them separately from the rest of the population and rather **assimilate them into the mainstream population.**
  - **Elderly-inclusive policies** which bring the larger segment of the elderly within the ambit of the welfare schemes shall be formulated ensuring the coverage upto the last mile.
- **Special Focus on Elderly Women:** Elderly women in particular shall be specifically looked after in the context of socio-economic upliftment, as the **longevity for women is much longer than men.**
  - Inaccessibility of opportunities to elderly women will make them dependent on others, exposing their survival to several vulnerabilities.

Proof of a truly developed country lies in the way it not only nurtures its young but also cares for its elders, equally. Certain essential steps must be taken to convert elders into a massive resource for socio-cultural and economic development, giving an altogether different perspective to “demographic dividend”.

**Each year a large amount of plant material, cellulose, is deposited on the surface of Planet Earth. What are the natural processes this cellulose undergoes before yielding carbon dioxide, water and other end products?**

Cellulose is being considered the **most abundant organic compound** on the earth. The chemical formula of cellulose as a chain is **(C<sub>6</sub>H<sub>10</sub>O<sub>5</sub>)<sub>n</sub>**. Cellulose is an important **structural component** of the primary cell **wall of green plants, many forms of algae and the oomycetes**. Some species of bacteria secrete it to form **biofilms**.

### Properties of Cellulose

- **Complex carbohydrate** that consists of **oxygen, carbon, and hydrogen**.
- **A chiral, tasteless compound without any odour**.
- **Biodegradable, insoluble** in water and most organic solvents.

### Natural Processes of Cellulose

#### Biosynthesis

- In plants, cellulose is **synthesized at the plasma membrane** by Rosette Terminal Complexes (**RTCs**).
- The RTCs contain the **cellulose synthase enzymes** that synthesis the individual cellulose chains.

#### Breakdown (Cellulolysis)

- Cellulolysis is the process of **breaking down cellulose** into smaller **polysaccharides** called **cellodextrins** or completely into glucose units.
- The breakdown products are **then used by the bacteria for proliferation**.
- The bacterial mass is **later digested by the ruminant** in its digestive system (stomach and small intestine).

#### Breakdown (thermolysis)

- At temperatures above 350 °C, cellulose undergoes **thermolysis (pyrolysis)**.
- It decomposes into **solid char, vapors, aerosols, and gases** such as carbon dioxide.
- The semi-crystalline cellulose polymers **react at pyrolysis** temperatures (350–600 °C) in a few seconds.
  - This transformation has been shown to occur via a **solid-to-liquid-to-vapor transition**.
- **Maximum yield of vapors** which **condense to a liquid** called **bio-oil** is obtained at 500 °C.

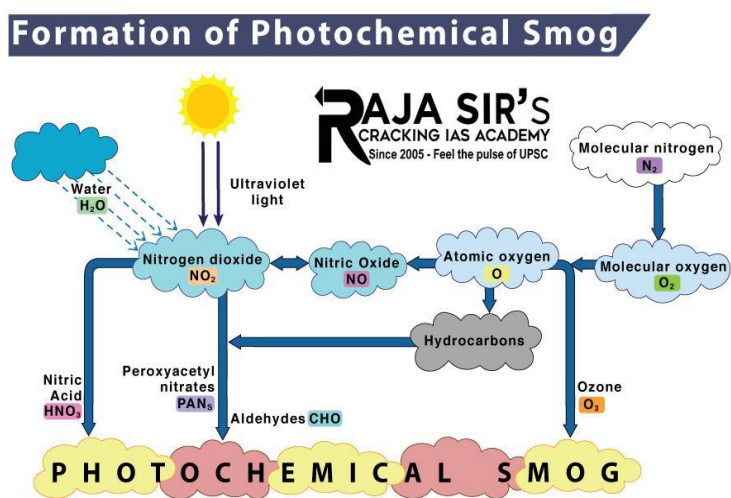
Generally, cellulose is mainly used to produce **paperboard and paper**. But its conversion from energy crops to biofuels such as **cellulosic ethanol** is under development as a **renewable fuel source**. The **biofuel production** from cellulose would be a revolutionary technology as it can fulfil India's target in **Paris Climate Agreement**.

**Discuss in detail the photochemical smog emphasizing its formation, effects and mitigation. Explain the 1999 Gothenburg protocol. (UPSC CSE Mains 2022 - General Studies Paper 3)**

- Photochemical smog, also known as summer smog, is a type of smog that is produced when UV light originating from the sun interacts with the oxides of nitrogen present in the atmosphere. This type of smog usually manifests as a brown haze and is most commonly seen in highly populated cities that are placed in relatively warm climates. Furthermore, photochemical smog is most prominently visible during the mornings and afternoons.

### Formation of Photochemical Smog

- Photochemical smog is formed by a complex series of chemical reactions involving sunlight, oxides of nitrogen, and volatile organic compounds that are present in the atmosphere as a result of air pollution. These reactions often result in the formation of ground level ozone and certain airborne particles. The formation of photochemical smog is closely related to the concentration of primary pollutants in the atmosphere. It is also related to the concentration of secondary pollutants (in some cases).
- Common examples of primary pollutants that contribute towards photochemical smog include oxides of nitrogen such as nitric oxide, nitrogen dioxide, and nitrous oxide and most VOCs (volatile organic compounds). Common examples of secondary pollutants that contribute towards the formation of photochemical smog include aldehydes, tropospheric ozone, and peroxyacetyl nitrates (often abbreviated to PAN).
- During peak-traffic hours in the morning, large amounts of nitrogen oxides and volatile hydrocarbons are released into the atmosphere. These pollutants can be traced to automobile emissions and industrial discharge. Some of these hydrocarbon pollutants rapidly undergo oxidation by the hydroxyl groups in the atmosphere, resulting in the formation of peroxy radicals. These peroxy radicals go on to convert nitric oxide into nitrogen dioxide.





## **Effects of Photochemical smog**

### **Health Effects**

- Photochemical smog is capable of inflicting irreversible damage on the lungs and heart. Even short-term exposure to photochemical smog tends to have ill effects on both the young and the elderly. It causes painful irritation of the respiratory system, reduced lung function and difficulty breathing; this is more evident while exercising or working outdoors. High levels of smog also trigger asthma attacks because the smog causes increased sensitivity to allergens, which are triggers for asthma.
- People with pre-existing health problems (such as respiratory diseases) are sensitive to ozone. Children, the elderly and people with poor lung function carry a far greater risk of developing respiratory illness from photochemical smog than healthy adults.

### **Effects on Environment**

- Photochemical smog has devastating effects on the environment. The collection of chemicals found in photochemical smog causes problems for plants and animal life. Some plants such as tobacco, tomato and spinach are highly responsive to ozone, so photochemical smog can decimate these sensitive crops, trees and other vegetation. Ozone causes necrotic (dead) patterns on the upper surfaces of the leaves of trees. Ground-level ozone also can interfere with the growth and productivity of trees. The effects of smog on animals are also similar to its effect on humans; it decreases lung capacity and lung elasticity.

### **Mitigation**

- Take precautionary steps to safeguard against the ill effects of photochemical smog. Generally, photochemical smog is less concentrated in the early morning or evening; therefore, exercising and planning outdoor activities during this part of the day limits smog exposure. Emissions from cars and other vehicles are the largest sources of smog. Reduce your daily pollutant emissions by driving less, making use of carpools, and maintaining the car in good condition. Other small actions, such as tightly sealing the lids of chemical products like garden chemicals, solvents, and household cleaners, minimizes evaporation of the chemicals and helps reduce smog.
- The problem of photochemical smog has also prompted some more serious reforms in an effort to reduce emissions. Switching over to other types of fuels, desulfurization of fuel gases from coal-fired power plants, expansion of public rail transport and low emission application of fertilizer in agriculture are some of the steps which have drastically reduced the level of photochemical smog.

### **Gothenburg Protocol 1999 (Multi Effect Protocol)**

- The official title of the protocol is UNECE Protocol to Abate Acidification, Eutrophication, and Ground-level Ozone (Gothenburg Protocol) (Protocol to the UNECE Convention on Long-Range Transboundary Air Pollution (LRTAP))
- The Gothenburg Protocol was established to address pollutants that cause acidification and ground-level ozone.
- It sets limits on air pollutants including sulfur dioxide, nitrogen oxide, ammonia, and volatile organic compounds that are hazardous to human health and the environment.
- It was updated in 2012 to include particulate matter (PM) and black carbon (as a component of PM) and to include new commitments for 2020.
- The Protocol establishes legally binding emissions reduction commitments for 2020 and beyond for the major air pollutants:
  - sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), ammonia (NH<sub>3</sub>), volatile organic compounds (VOCs), and delicate Particulate Matter (PM<sub>5</sub>).
  - these chemicals also contribute to photochemical smog formation.

The objective of the Gothenburg Protocol under the United Nations Economic Commission for Europe's (UNECE) LRTAP Convention is:

- to control and reduce emissions of sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), ammonia (NH<sub>3</sub>), volatile organic compounds (VOCs), and PM that are caused by human activities.
- to ensure that atmospheric depositions or concentrations do not exceed critical loads/levels;
- that Parties give priority, to implementing measures to reduce PM, to sources that are also significant sources of black carbon to provide benefits for human health and the environment and to help mitigation of near-term climate change.

This multi-pollutant, multi-effect protocol is meant to eventually replace the older protocols that cover the same pollutants.

Thus, when all Parties ratify the amended Protocol, their obligations under the following existing protocols: SO<sub>2</sub> (1985 Helsinki and 1994 Oslo Protocols); NO<sub>x</sub> (1988 Sofia Protocol); and VOC (1991 Geneva Protocol); will become null and void.

India has not signed the protocol.

**Explain the mechanism and occurrence of cloudburst in the context of the Indian subcontinent. Discuss two recent examples. (UPSC CSE Mains 2022 - General Studies Paper 3)**

A cloudburst refers to an extreme amount of rain that happens in a short period, sometimes accompanied by hail and thunder. The India Meteorological Department (IMD) defines it as unexpected precipitation exceeding 100mm (or 10 cm) per hour over a geographical region of approximately 20 to 30 square km. All instances of cloudbursts involve heavy rain in a short period, but all instances of heavy rain in a short period are not cloudbursts if they do not fit this criterion.

**Reasons behind Cloudburst:**

- It is difficult to predict when exactly a cloudburst will occur. However, they are more likely to occur in mountainous zones mainly because of terrain and elevation.
- **Cloudbursts** are mostly caused by an excessive amount of **condensation** in the clouds during a thunderstorm. During a thunderstorm, the warm air currents pull the falling drops of water upwards creating an excess **accumulation of water** in the clouds. If it reaches a point where the upward air current is weakened, it results in sudden **precipitation** and downpour of all the accumulated water, in a short time causing floods in the surrounding areas.

**Impacts of Cloudburst:**

- **Flooding:** A cloudburst can have a devastating impact triggering **flash floods**. These floods can cause uprooting of trees and movement of boulders and other debris.
- **Damage to infrastructure:** Cloudbursts can also damage houses, roads, loss of bridges because of the sheer force in which the downpour occurs.
- **Landslides:** Sudden heavy rain caused by **cloudbursts** in hilly and mountainous areas can trigger landslides.
- Another effect of cloudbursts is the damage they can cause to **trees, plants, and crops**, loss of arable land, livestock.

**Recent Examples**

- Over 20 people have been killed in destruction caused by cloudbursts and flash floods in different parts of **Himachal Pradesh and Uttarakhand** over the last three days. Isolated areas in these two states have reported heavy rainfall during this time, triggering landslides and flash floods that have disrupted rail and road traffic, and resulted in house and wall collapses. (July 2022)

**Measures to prevent and reduce the devastating impacts of cloudbursts:**

- **Regulation of construction activities** along river banks with special consideration to water level during heavy rainfall.

- **Strengthening of embankments, barrages and dams** to constrain & regulate water flow.
- **Localized planning** taking into consideration the ecologically fragile nature of the region and involving the local communities'
- **Regulate infrastructure projects** and preserve the sanctity of eco-sensitive zones.
- **Better forecasting** by IMD and incorporation of advanced technology to monitor and predict extreme weather events can enable early warning, evacuation and preparedness
- Adoption of **ecofriendly policies** and eco-sensitive tourism for development of the region.
- Incorporation of disaster management and prevention into the developmental planning process.

Utilization and leverage of local knowledge, resources, can have a multiplier effect on mitigation. Participation of local bodies such as NGOs, Gram Sabhas, Panchayats can strengthen the entire framework of disaster management.

## Why forecasting cloudbursts is a challenge

Efforts to monitor and forecast cloudbursts are still at a nascent stage

**1** As per the IMD definition, over **100 mm of rainfall in one hour** is called a cloudburst. It usually occurs over a small geographical region (20-30 sq. km)

**2** Rainfall of 100 mm per hour translates to **100 litres for every square metre** where a cloudburst occurs. For a small region of 20 sq. km, it is about **two billion litres of water** in an hour

**3** Tall cumulonimbus clouds causing cloudbursts can develop quickly (in about **30 minutes**) as the moisture

updraft happens rapidly – 60-120 km/hr

**4** Cloudbursts occur mostly over the rugged terrains over **the Himalayas, Western Ghats**, and northeastern hill States of India

**5** In India, cloudbursts often occur during the monsoon season, when the **SW monsoon winds bring in** copious amounts of moisture inland

**6** Satellites fail to detect cloudburst systems as the **resolution of the**

**precipitation radars** are much smaller than the area of individual cloudburst events

**7** Multiple doppler weather radars can **monitor moving cloud droplets** and help to provide forecast for the next three hours. But **radars are expensive** and installing them widely may not be feasible

**8** The change in monsoon extremes and cloudbursts are in response to the **1-degree Celsius rise** in global surface temperature

**Discuss the types of organised crimes. Describe the linkages between terrorists and organised crime that exist at the national and transnational levels.(UPSC CSE Mains 2022 - General Studies Paper 3)**

The term “organised crime” refers to criminal activity carried out repeatedly for financial gain. Examples could include smuggling, money laundering, human trafficking, etc.

- Gang criminality, racketeering, and syndicated crime are the three main subtypes of organised crime.
- The large-scale forms of gang crime include kidnapping, extortion, robbery, and vehicle theft.
- Racketeering is the practise of an organised criminal organisation using coercion or force to collect money from both legal and illegal companies.
- Providing unlawful goods and services by an organised criminal gang, frequently referred to as the “mafia,” is known as syndicated crime.

There are linkages between organized crime and terrorism, particularly in terms of the funding of extremist groups by criminal networks, and the use of criminal activities to support terrorism. Criminal networks can provide significant financial resources to extremist groups.

- In some cases, terrorist groups and criminal networks may even collaborate in these activities or merge to expand their operations.
- This funding from criminal networks can help to sustain and enhance the capabilities of extremist groups, enabling them to carry out attacks, recruit new members, and expand their operations.
- It also creates a challenge for law enforcement agencies, who must work to disrupt the flow of illicit funds and prevent these groups from accessing the resources they need to carry out their activities.
- Terrorist groups can also use criminal activities to support their operations, including money laundering, counterfeiting, and smuggling of goods and weapons.
- These criminal activities provide a source of funding and resources for terrorist operations and can help to increase their power and influence.
- The linkages between organized crime and terrorism pose a significant threat to global security and stability.

Indian Scenario

- In India, the linkages between the two exist at national and transnational levels. At the national level, both terrorists and those involved in organized crime are within India. At the international level, collaboration exists between transnational syndicates and terrorists from inside and outside India.
- India’s proximity to drug-producing regions like Golden Crescent in the West and Golden Triangle in the East has always been a cause of worry.



- In the Northeast, extortion is the fundamental basis for funding all forms of terrorism. In addition to this, kidnapping has been used extensively for spreading terror and raising funds. Human trafficking, drug trafficking, and gun-running are some of the other criminal activities that have been common in these areas.
- In J&K, counterfeit currency has been a major source of funding for terrorism.
- In the Maoist terror movements, extortion is yet again a common phenomenon. They have also indulged in robberies of banks to fund their movement. There have also been reports of cuts being enforced on drug-yielding crops in the region.
- The Indian Mujahideen have also resorted to crime to raise funds. This includes robberies, kidnappings, etc.
- Governments and law enforcement agencies around the world are working to disrupt these networks and cut off their sources of funding, in order to weaken their ability to carry out their criminal and terrorist activities.

Efforts to counter the linkages between organized crime and terrorism involve targeting the financial networks that support these groups, as well as working to prevent the recruitment of new members and disrupting the supply chains that enable their operations. This requires international cooperation and coordination among law enforcement agencies, intelligence services, and governments around the world.

**What are the maritime security challenges in India? Discuss the organisational, technical and procedural initiatives taken to improve the maritime security. (UPSC CSE Mains 2022 - General Studies Paper 3)**

There is **no common definition of maritime security** in international relations. Nonetheless, the term includes issues in the maritime domain comprising **national security, marine environment, economic development, and human security**. Besides the world's oceans, it also deals with regional seas, territorial waters, rivers, and ports.

India has more than 7000 km long maritime border shared with seven nations. Instruments of maritime security protects the territorial sovereignty of nation from possible marine threats.

### **Maritime Security Issues**

1. **Piracy:** There is a persistent threat of pirate attacks on ships, especially around the Somali coast. This jeopardizes trade and commerce.



2. **Terrorism:** International waters are used by terrorists to execute their operations. For instance, the 2008 Mumbai Attacks occurred due to a maritime security lapse.
3. **Illegal Migration:** International Oceans are a better way to enter into another country's territory than taking the land/air route. Thus, a higher degree of illegal migration happens through maritime waters.
4. **Transnational organized crimes:** The waters are also used for transnational organized crimes that inflict significant harm on the global economy and jeopardize the security of the state.
  - This includes illicit trafficking in narcotic drugs and psychotropic substances, trafficking in persons, illicit trafficking in firearms, etc.
5. **Environmental catastrophes:** The rising pollution level and climate change have enhanced the frequencies of cyclones, floods, etc. catastrophes across the world.

### Initiatives

#### **Organisational**

- India launched security and growth for all (**SAGAR**) policy to integrated collaboration with Indian ocean region nations.
- India introduced the establishment of **integrated theatre command**.
- India set up an **International fusion centre (IFC)** for Indian ocean region in Gurugram.
- Recently quad launched Indo-pacific partnership for maritime domain awareness (**IPMDA**) for better coordination and awareness.
- India is part of various organisations and dialogue like **IONS, IORA and India-EU maritime** dialogue.

#### **Technical**

- Mission based deployment of naval ships and aircrafts. Like, INS Vikrant, Nuclear Submarines and project 75I etc.
- India is working on **digital cargo and bay arrangement optimization** to enhance efficiency of maritime security.
- India introduced advanced Electronic Warfare System '**Shakti**' in Indian Navy.
- India used advance electronic and digital surveillance over the marine border.

#### **Procedural**

- Being signatory of United Nations Convention on the Law of the Sea (**UNCLOS**), India adheres all its rules and regulations.
- India follows the procedure of operational interactions with friendly nations via joint exclusive economic zones (**EEZ**) surveillance.

#### **Looking Ahead**

- Swift coordination and collaboration of various security institution is much needed. It can enhance the efficiency in maritime security services.
- Multilateral information sharing is key to prevent marine threats. So, there should be an **integrated multilateral data sharing platform**.
- Best practices of other marine nations should be shared among all friendly nations holistically.

**"Economic growth in the recent past has been led by increase in labour productivity." Explain this statement. Suggest the growth pattern that will lead to creation of more jobs without compromising labour productivity. (UPSC CSE Mains 2022 - General Studies Paper 3)**

- As an economy's labor productivity grows, it produces more goods and services for the same amount of relative work. This increase in output makes it possible to consume more of the goods and services for an increasingly reasonable price.
- There is usually a need to increase both the number of jobs and the productivity as well as incomes from employment. The link between jobs and economic growth is not always a straight line for countries, but that does not mean it is broken. Economists track **the relationship between jobs and growth using Okun's Law**, which says that **higher growth leads to lower unemployment**. In net, the sectoral bias of rising productivity has not diminished aggregate labor demand but has yielded skill-biased demand shifts.
- India is indeed the fastest growing large economy in the world; yet with investment low, credit offtake low, capacity utilization in industry low, agricultural growth low, plant load factor low, it is hardly surprising that job growth is low as well.

There can be a growth **pattern** that will lead to creation of more jobs without compromising labor productivity.

- First, an industrial and trade policy is needed.
- Second, special packages are needed for labor-intensive industries to create jobs.
- Three, there should be cluster development to support job creation in micro, small and medium enterprises (MSMEs).
- Fourth, align urban development with manufacturing clusters to create jobs.
- Fifth, focus on women. Girls are losing out on jobs, or those with increasing education cannot find them, despite having gotten higher levels of education in the last 10 years.

- Sixth, public investments in health, education, police and judiciary can create many government jobs.

### **Conceptual Part - Additional**

The employment elasticity shows the proportion of an economy's growth (development) process that goes toward creating jobs for its population. When the employment elasticity is 1, employment increases at the same pace as the economy. A value of 0 for elasticity means that employment does not increase at all regardless of economic expansion. Employment contracts as the economy expands, which is referred to as negative employment elasticity. This is important since it's a prevalent misconception that employment will expand with just economic development.

Two types of complaints are frequently levelled towards employment elasticity measurement:

- The link between output and employment doesn't need to be one-way.
- The idea of employment elasticity is true given a particular technological stage, pay rate, and set of policies.

The negative employment elasticity in agriculture suggests that individuals move out of agriculture and into other industries with higher wage rates. This movement of excess employees to other sectors in search of productive and profitable labour is required for inclusive growth. However, the manufacturing sector's negative employment elasticity was a reason for concern, especially given the sector's strong production growth.

Employment elasticity is a concise method of summarising the intensity of the increase in employment or the sensitivity of employment to output growth. It is also often used to track sectoral job creation potential and estimate future employment development.

**Do you think India will meet 50 percent of its energy needs from renewable energy by 2030? Justify your answer. How will the shift of subsidies from fossil fuels to renewables help achieve the above objective? Explain. (UPSC CSE Mains 2022 - General Studies Paper 3)**

India at the COP 26th meeting of the United Nations Convention on Climate Change (UNFCCC) committed to the 5-point agenda programme. One of them is to meet 50% of its energy requirements from renewable energy by 2030.

To reach the above commitments India has already achieved few targets:

- India has overachieved its commitment made at COP 21- Paris Summit by already meeting 40% of its power capacity from non-fossil fuels.
- India is also one of the world's largest producers of modern bioenergy.

- Today, India is the world's third largest producer of renewable energy, with 40% of its installed electricity capacity coming from non-fossil fuel sources.
- India's massive UJALA LED bulb campaign is reducing emissions by 40 million tonnes annually.

However, there are a few challenges in achieving the target:

- To meet the above target India will need massive funding. BloombergNEF (BNEF) report says that only to meet wind and solar energy targets India will need \$223 Billion.
- In the short-term rising interest rates, a depreciating rupee and high-inflation create challenges for the financing of renewables.
- Even, to complete the targets Indian government needs to cut down its taxes for almost 2 lakh crores by 2030 which will effect the other sectors like education, health and infrastructure.

Fossil fuel subsidies by the Union government have fallen 742% since 2014 but the subsidies on coal, oil and gas increased by nine times in 2021-22. Still, the Fossil fuel subsidies in India nine times higher than renewable energy. So, there is no complete shift to subsidies on renewable energy sources.

Although, the shift of subsidies from fossil fuels to renewables will help in subsidies for E- vehicles and raising taxes on fossil fuels will help in achieving the above objective because giving subsidies to renewable sources will make it look cheaper and this will also work against the fossil-fueled incumbents that are preventing new renewable energy entrants access to the market. For example, giving subsidies for E- vehicles and raising taxes on fossil fuels will help in achieving levels needed by 2030 as it will contain global warming to the Paris goal of 1.5-2C.

**Read More:**

<https://www.outlookindia.com/national/india-on-track-to-attain-more-than-50-of-its-energy-requirements-from-non-fossil-sources-by-2030-report-news-229566>

**What are the main bottlenecks in upstream and downstream process of marketing of agricultural products in India?. (UPSC CSE Mains 2022 - General Studies Paper 3)**

Agriculture is the backbone of the Indian economy. Even, with the growth of other sectors, agriculture still continues to play a dominant part in the overall economic scenario of India. Agricultural marketing is mainly a state entitlement with the Central Government providing support under central sector schemes. The upstream process of agricultural marketing includes inputs to agriculture like seeds, machinery, and technology and the downstream process includes the food processing industry.

However, there are still many challenges in upstream and downstream process of agricultural marketing:

- In the upstream process, lack of coverage of reform policies is one of the main hindrances in addressing the issues of agricultural marketing. For example, only some States have adopted the Agricultural Produce and Livestock Marketing (APLMA) Act fully.
- Contract farming has been taken out of the Agricultural Produce Marketing Committee (APMC) domain, citing conflict of interest and this creates lacunae in the upstream as well as downstream process.
- Another downstream bottleneck is flawed MSP provision which forces the private traders to buy produce at or above MSP or penalizing for not doing so, which can kill the private markets for agricultural produce.
- There should be effective provision of procurement by the State and its agencies with the involvement of local institutions like Primary Agricultural Credit Societies (PACS) and producer companies as it effects sourcing activities and purchasing activities in upstream and downstream process.
- Most disappointingly, Agricultural Produce and Livestock Marketing (Promotion and Facilitation) Act, 2017 (APLMA, 2017) ignores the vexed issue of the role of Arthiyas (commission agents or CAs) in the APMCs and maintains them as central agents in the system. This effects the whole agricultural marketing process.

However, with some reforms like the removal of entry barriers, involvement of other stakeholders and electronic settlement of sales, the process of marketing of agricultural products can be improved.

Addressing the challenges of the agricultural market is complex, yet doable, as the doubling of farmers' income cannot come without developing a thriving market of agriculture. Hence, it is high time that focus must shift from agricultural production to agricultural marketing.

### What is Integrated Farming System? How is it helpful to small and marginal farmers in India?(UPSC CSE Mains 2022 - General Studies Paper 3)

The term "**Integrated Farming System**" is frequently used to describe a **more integrated method of farming** than monoculture methods. It is a **multidimensional approach** designed to manage resources sustainably and effectively for higher crop output. The Integrated Farming System uses **organic farming, livestock, vermicomposting, and other methods** to achieve its numerous goals of **sustainability, food security, farmer security, and poverty reduction**. The

interrelated, inter-dependent-interlocking nature of IFS involves the utilization of primary produce and secondary produce of one system, as basic input of the other system, thus making them mutually integrated as one whole unit.

It can help in tackling the farmer's distress as it focuses on the following –

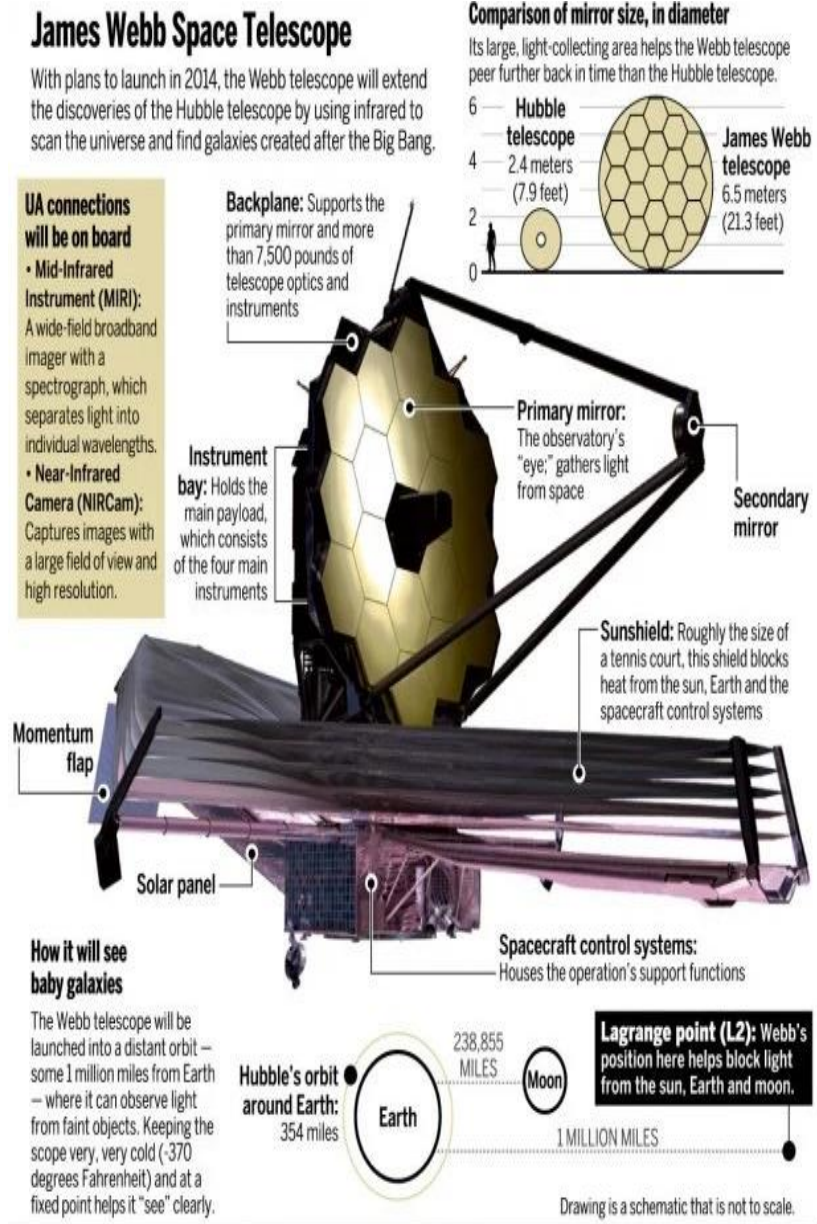
- **Utilizing the by-products** of one component of the farming system as an input in other for ensuring supplementary and complementary enterprise relationship. Thus reducing the effective input cost. For example, cattle dung mixed with crop residues and farm waste can be converted in to nutrient-rich vermicompost.
- **Maximization of yield** of all component enterprises to provide steady and stable income at higher levels.
- **Rejuvenation/amelioration of systems productivity** and achieve agro ecological equilibrium.
- **Control the built-up** of insects-pest, diseases and weeds population through natural cropping system management and keep them at low level of intensity.
- **Reducing the use of chemical fertilizer** and other harmful agrochemicals and pesticides to provide pollution free, healthy produce and environment to the society at large.
- **Increase in natural resource** use efficiency by early recycling of nutrients.
- Some IFS features like Organic farming, and developing a judicious mix of income-generating activities such as dairy, poultry, fishery, goat-rearing, vermicomposting and others, and community-led local systems for water conservation etc help in reducing farmers' distress.
- **Mitigation of negative impact** of agriculture or livestock on environment.
- **Effective tool for north eastern farmers:** Integrated Farming Systems suitable particularly for hilly regions of the North Eastern Region can be adopted. Some are as - Integrated Fish cum Pig farming, Integrated Fish cum Duck Farming, Integrated Fish Farming-Chicken, Integrated Fish farming-cum-Cattle farming, Integrated Fish farming-cum-Rabbit farming, Integrated Fish farming-cum-Agriculture. Sikkim being an organic state is an good example.
- In its real sense it will help in lifting the economy of agriculture and standard of living of the farmers of the country as a whole.

All stakeholders should make continuous efforts to build farmer capacities for adoption of productive, remunerative, eco-friendly and self-sustaining integrated farming systems.



**Launched on 25th December, 2021, James Webb Space Telescope has been much in news since then. What are its unique features which makes it superior to its predecessor Space Telescopes? What are the key goals of this mission? What potential benefits does it hold for the human race? (Answer in 250 words). UPSC IAS Mains 2022 General Studies (Paper – 3)**

- James Webb telescope is the result of an international collaboration between NASA, the **European Space Agency (ESA)** and the Canadian Space Agency which was launched in December 2021.
- It is currently at a point in space known as the **Sun-Earth L2 Lagrange point**, approximately 1.5 million km beyond Earth's orbit around the Sun.
- It's the largest, most powerful infrared space telescope ever built.
- It's the **successor to Hubble Telescope**.
- Its advanced equipment can look backwards in time to just after the Big Bang (birth of universe) by looking for distant galaxies that are so far away that the light has taken many billions of years to get from those galaxies to our telescopes.



**Special Features of James Webb:**

- The JWST will **observe primarily in the infrared range** and provide coverage from 0.6 to 28 microns.
- The instruments on its predecessor **Hubble telescope see mainly in the ultraviolet and visible part of the spectrum**. It could observe only a small range in the infrared from 0.8 to 2.5 microns.
  - Whereas, Webb's primary mirror has a **diameter of 6.5 metres while** Hubble's mirror was much **smaller – 2.4 metres in diameter**.

#### **Key goals of the James Webb telescope:**

- It will **examine every phase of cosmic history**: from the Big Bang to the formation of galaxies, stars, and planets to the evolution of our own Solar System.
- The goals for the Webb can be grouped into four themes.
  - The first is to **look back around 13.5 billion years** to see the first stars and galaxies forming out of the darkness of the early universe.
  - Second, to compare the faintest, earliest galaxies to today's grand spirals and understand how galaxies assemble over billions of years.
  - Third, to see where stars and planetary systems are being born.
  - Fourth, to observe the atmospheres of extrasolar planets (beyond our solar system), and perhaps find the building blocks of life elsewhere in the universe.

#### **Potential benefits to humans:**

- It will **reveal new and unexpected discoveries**, and help humanity understand the origins of the universe and our place in it.
- The telescope will study the atmospheres of a **wide diversity of exoplanets**.
- It will **also search for atmospheres like Earth's**, and for the signatures of key substances such as methane, water, oxygen, carbon dioxide, and complex organic molecules, in hopes of finding the building blocks of life.

James Webb's state of the art instruments make it ideal to search for evidence of potentially life-supporting atmospheres around many of the newly documented exoplanets and to observe worlds of Mars and Saturn's icy moon Titan, thus, making it open a whole new world of information about the universe and will bring about a revolution in the astronomical world.

**Discuss global warming and mention its effects on the global climate. Explain the control measures to bring down the level of greenhouse gases which cause global warming, in the light of the Kyoto Protocol, 1997. UPSC IAS Mains 2022  
General Studies (Paper – 3)**

- Global warming is the long-term warming of the planet due to the increasing levels of greenhouse gases, such as carbon dioxide, in the atmosphere. These gases trap heat from the sun and prevent it from escaping back into space, causing the Earth's surface temperature to rise. The main cause of global warming is the burning of fossil fuels, such as coal, oil, and gas, which releases large amounts of carbon dioxide into the atmosphere.
- The effects of global warming on the global climate are numerous and varied. It is causing the Earth's average surface temperature to rise, leading to more frequent heatwaves and extreme weather events such as hurricanes and floods. It is also causing sea levels to rise, which can lead to coastal flooding and the displacement of people who live near the coast. Global warming is also causing changes in precipitation patterns and the melting of glaciers and ice caps, which can have serious impacts on water availability and ecosystems around the world.
- To bring down the level of greenhouse gases and mitigate the effects of global warming, it is necessary to implement control measures that reduce the emission of these gases. One such measure is the Kyoto Protocol, a treaty that was adopted in 1997 under the United Nations Framework Convention on Climate Change. The protocol sets binding targets for the reduction of greenhouse gas emissions for developed countries, with the goal of limiting global warming to 2 degrees Celsius above preindustrial levels. The protocol also provides mechanisms for countries to offset their emissions through the use of carbon credits and the development of clean energy technologies. Although the Kyoto Protocol has been successful in reducing emissions in some countries, it has faced criticism for not being ambitious enough and for not including developing countries in its emission reduction targets.

**What is the basic principle behind vaccine development? How do vaccines work? What approaches were adopted by the Indian vaccine manufacturers to produce COVID-19 vaccines?. UPSC IAS Mains 2022 General Studies (Paper – 3)**

### Principle

The basic principle of vaccination is "memory" of the immune system. Vaccines let the immune system to learn how to fight the future onslaught of that pathogen for which vaccine is being given. The body prepares antibodies in response to vaccination and remembers this act. When the related pathogen attacks in the future, the immune system uses its "memory" to fight the infection. Hepatitis B vaccine is produced from yeast.

### Working

Vaccines contain weakened or inactive parts of a particular organism (antigen) that triggers an immune response within the body. Newer vaccines contain the blueprint for producing antigens rather than the antigen itself. Regardless of whether the vaccine is made up of the antigen itself or the blueprint so that the body will produce the antigen, this weakened version will not cause the disease in the person receiving the vaccine, but it will prompt their immune system to respond much as it would have on its first reaction to the actual pathogen.

Some vaccines require multiple doses, given weeks or months apart. This is sometimes needed to allow for the production of long-lived antibodies and development of memory cells. In this way, the body is trained to fight the specific disease-causing organism, building up memory of the pathogen so as to rapidly fight it if and when exposed in the future.

### **Approaches adopted by India**

There are three main approaches to designing a vaccine. Their differences lie in whether they use a **whole** virus or bacterium; just the **parts** of the germ that triggers the immune system; or just the **genetic material** that provides the instructions for making specific proteins and not the whole virus.

- **Whole virus vaccines** use a weakened (attenuated) or deactivated form of the pathogen that causes a disease to trigger protective immunity to it. There are two types of whole virus vaccines. Live attenuated vaccines use a weakened form of the virus, which can still grow and replicate, but does not cause illness. Inactivated vaccines contain viruses whose genetic material has been destroyed by heat, chemicals or radiation so they cannot infect cells and replicate, but can still trigger an immune response. **COVAXIN** developed by the **Bharat-Biotech**, is an **inactivated vaccine** which is developed by inactivating the live microorganisms that cause the disease.
- **A subunit vaccine** is one that only uses the very specific parts (the subunits) of a virus or bacterium that the immune system needs to recognize. It doesn't contain the whole microbe or use a safe virus as a vector. The subunits may be

proteins or sugars. Most of the vaccines on the childhood schedule are subunit vaccines, protecting people from diseases such as whooping cough, tetanus, diphtheria and meningococcal meningitis. CORBEVAX, developed by Biological E Limited, is a recombinant protein sub-unit vaccine developed from the Receptor Binding Domain (RBD) of the spike protein on the viral surface is adjuvanted with CpG 1018 and alum.

- **The genetic approach (nucleic acid vaccine)** - Unlike vaccine approaches that use either a weakened or dead whole microbe or parts of one, a nucleic acid vaccine just uses a section of genetic material that provides the instructions for specific proteins, not the whole microbe. DNA and RNA are the instructions our cells use to make proteins. In our cells, DNA is first turned into messenger RNA, which is then used as the blueprint to make specific proteins.
  - A nucleic acid vaccine delivers a specific set of instructions to our cells, either as DNA or mRNA, for them to make the specific protein that we want our immune system to recognize and respond to.
  - The nucleic acid approach is a new way of developing vaccines. Before the COVID-19 pandemic, none had yet been through the full approvals process for use in humans, though some DNA vaccines, including for particular cancers, were undergoing human trials. Because of the pandemic, research in this area has progressed very fast and some mRNA vaccines for COVID-19 are getting emergency use authorization, which means they can now be given to people beyond using them only in clinical trials.
  - GEMCOVAC-19 is the very first mRNA vaccine developed in India and only third mRNA vaccine to be approved for COVID-19 in the world.

India has always supported the research, development and manufacturing of COVID-19 vaccines under the **“Make-in-India”** and **“Make-for-World” Strategy**, embarked on the use of cutting-edge technologies like CoWIN.

**Explain the causes and effects of coastal erosion in India. What are the available coastal management techniques for combating the hazard?. UPSC IAS Mains 2022 General Studies (Paper – 3)**

Coastal erosion is the wearing away of the land along the coast by the action of wind, waves, and tides. It is a natural process that occurs over time, but it can be exacerbated by human activities such as the construction of sea walls, the extraction of sand from beaches, and the alteration of natural shoreline features. In India, coastal erosion is a major concern due to the country's long coastline and the high population density in many coastal areas. Some of the main causes of coastal erosion in India include:



1. **Sea level rise:** Global warming is causing sea levels to rise, which can lead to more frequent and severe erosion along the coast.
2. **Unsustainable development:** The construction of sea walls and other coastal structures can disrupt the natural flow of sand along the shore and lead to erosion.
3. **Overcrowding:** The high population density in many coastal areas of India leads to the overuse of natural resources and the alteration of natural shoreline features, which can contribute to erosion.

The effects of coastal erosion in India can be severe, including the loss of valuable coastal land, the destruction of infrastructure and homes, and the displacement of communities. It can also have negative impacts on the environment, such as the loss of habitat for wildlife and the degradation of water quality. To combat the hazard of coastal erosion, several techniques are available, including:

1. **Beach nourishment:** This involves the addition of sand to the beach to restore its natural slope and protect against erosion.
2. **Groins and breakwaters:** These are structures that are built perpendicular to the shore to trap sand and protect against erosion.
3. **Soft shore protection:** This involves the use of natural materials such as vegetation or sand-filled bags to protect against erosion.
4. **Coastal zoning:** This involves the careful planning of development along the coast to minimize the impact on natural shoreline processes.

One example of coastal management techniques being used in India is the creation of the **Chennai Coastal Zone Management Plan**, which aims to reduce the impact of development on the coast and protect against erosion. The plan includes measures such as the creation of buffer zones along the coast, the regulation of development in vulnerable areas, and the implementation of best practices for coastal construction.

**What are the different elements of cyber security? Keeping in view the challenges in cyber security, examine the extent to which India has successfully developed a comprehensive National Cyber Security Strategy. UPSC IAS Mains 2022 General Studies (Paper – 3)**

Cybersecurity is the practice of protecting computer systems, networks, and devices from digital attacks, theft, and damage. It involves a range of elements, including:

1. **Network security:** Protecting the infrastructure of a network, including routers, switches, and firewalls, from unauthorized access or attacks.
2. **Application security:** Protecting the applications that run on a network or device from vulnerabilities or attacks.



3. Data security: Protecting the confidentiality, integrity, and availability of data stored on a network or device.
4. Endpoint security: Protecting individual devices, such as computers or smartphones, from attacks or breaches.
5. User education: Ensuring that users are aware of best practices for security and are able to recognize and prevent potential threats.

In recent years, India has faced a range of challenges in cybersecurity, including the rapid growth of the internet and the increasing sophistication of cyber attacks. In response, the Indian government has developed a comprehensive National Cyber Security Strategy to address these challenges. The strategy includes measures such as:

1. The establishment of a National Cyber Coordination Centre to monitor and respond to cyber threats.
2. The creation of a Cyber Emergency Response Team to coordinate the response to cyber incidents.
3. The development of a National Critical Information Infrastructure Protection Centre to protect critical infrastructure from cyber attacks.
4. The implementation of cyber security awareness and training programs for government agencies and the general public.

Overall, India has made significant progress in developing a comprehensive National Cyber Security Strategy, but there is still room for improvement. The country continues to face challenges such as the lack of skilled personnel and the need for stronger regulatory frameworks, but it is making progress in addressing these challenges and improving its cyber security posture.

**Naxalism is a social, economic and developmental issue manifesting as a violent internal security threat. In this context, discuss the emerging issues and suggest a multilayered strategy to tackle the menace of Naxalism. UPSC IAS Mains 2022 General Studies (Paper – 3)**

Naxalism is a term used to describe a violent left-wing insurgency movement in India that seeks to overthrow the government and establish a socialist state. The movement is rooted in issues of social, economic, and developmental inequality, and has been active in India for more than 5 decades. Over the years, the menace of Naxalism has evolved and new issues have emerged that need to be addressed in order to effectively tackle the threat. Some of these emerging issues include:

1. The increasing use of technology by Naxalites: In recent years, Naxalites have been using technology such as satellite phones, drones, and social media to coordinate and carry out attacks. This has made it more difficult for the government to track and disrupt their activities.

2. The involvement of foreign groups: There have been reports of foreign groups, such as the Maoist Communist Party of Nepal, providing funding and support to Naxalites in India. This adds an international dimension to the threat and complicates efforts to counter it.
3. The involvement of women: Women have traditionally played a minor role in the Naxalite movement, but there are signs that this is changing. More women are now joining the movement and taking on leadership roles, which presents new challenges for the government.

To effectively tackle the menace of Naxalism, a multilayered strategy is needed that addresses both the underlying causes of the movement and the immediate threat it poses. Some key elements of such a strategy might include:

1. Development and economic initiatives: Addressing issues of poverty and inequality in Naxalite-affected areas can help to address the root causes of the movement. This could include initiatives such as job training, education, and infrastructure development.
2. Law enforcement and counter-insurgency measures: To disrupt the activities of Naxalites and protect civilians, it is necessary to have a strong law enforcement and counter-insurgency presence in Naxalite-affected areas. This could include measures such as intelligence gathering, patrols, and targeted operations against key leaders.
3. Political engagement and reconciliation: Engaging with Naxalite leaders and working towards a peaceful resolution of the conflict can help to reduce the threat posed by the movement. This could include initiatives such as peace talks, rehabilitation programs, and community engagement.

Overall, a multifaceted approach that addresses both the underlying causes of Naxalism and the immediate threat it poses is needed to effectively tackle this complex issue.

**Wisdom lies in knowing what to reckon with and what to overlook. An officer being engrossed with the periphery, ignoring the core issues before him, is not rare in the bureaucracy. Do you agree that such preoccupation of an administrator leads to travesty of justice to the cause of effective service delivery and good governance? Critically evaluate. UPSC IAS Mains 2022 General Studies (Paper – 4)**

Goal orientedness, identification of core issue, focus on achievement of objective are considered as cardinal virtues of a good civil servant. Wisdom is the ability to differentiate between ethical and unethical conduct, between core and peripheral issues on the basis of rationality and human values.

Core issues in governance

- Strong and ethical decision making.
- Innovation and creativity.
- Improvement in work culture.
- Promoting good governance.
- Better and efficient service delivery.
- Values of empathy and compassion.
- Long term goals and visions for organization and nation.
- Combatting corruption.
- Improving transparency and accountability.
- Reducing red-tapism.

Peripheral issues in governance

- Focus on traditional work culture.
- Rules as end in itself.
- Office politics.
- Office perks.
- Over centralized decision making
- Dependency on subordinates.
- Political biasness.
- Colonial mind-set.
- Reluctance to change.
- Reluctance to incorporate ICT in work culture.
- “Chalta hai” attitude towards work.

In civil services, there is no dearth of officers who focus on above peripheral issues. This preoccupation with peripheral concerns causes issues like-

- Dismal bureaucratic performance.
- More than 300 million people still poor in the country.

- Consistent low HDI rank 131.
- Global hunger index ranking of 101. Way forward.
- Improving competencies of civil servants through regular trainings.
- Attitude change from colonial to developmental bureaucracy.
- Multi stakeholder approach- involving NGOs, civil society, citizens in decision making and implementation.
- 360-degree performance appraisal- fixing accountability of officers.
- Converting outlays into outcomes for effective evaluation.

Recently, Government announced mission “Karmayogi” to transform bureaucracy from rule based to role based to address core issues, effective and efficient delivery of services, and good governance.

**Apart from intellectual competency and moral qualities, empathy and compassion are some of the other vital attributes that facilitate the civil servants to be more competent in tackling the crucial issues or taking critical decisions. Explain with suitable illustrations. UPSC IAS Mains 2022 General Studies (Paper – 4)**

Competencies are the skills, knowledge and behaviors that lead to successful performance of civil servants. Intellectual competencies help in achieving objectivity and cooperation whereas moral qualities help in building character and ensures ethical governance.

#### Desirable competencies of civil servants

- Seeing the big picture.
- Changing and improving.
- Making effective decisions.
- Leading by example and clear communication.
- Collaborating and partnering.
- Building capabilities for all.
- Achieving commercial outcomes.
- Delivering quality services.
- Value for money.
- Delivering at pace.

Empathy refers to the ability to imagine oneself in other’s place and understand others’ feeling, desires, ideas, objectives and actions.

Compassion refers to a step further, where a person not only feels empathy but also a desire to help alleviate the suffering of the other person. Thus, the emphasis here is on the action and willingness to help.

Role of empathy and compassion in governance:

- Provides a sense of kinship and concern.
- Induces belongingness with citizens.
- Enables us to better understand how others are feeling so we can respond appropriately in various situations.
- Ensures that the public servants act sensitively and interpret the rules so as to advance public interest.
- Essential quality of administration in welfare state.

Civil servants who have shown exceptional empathy and compassion – Shri. P Narhari transformed Gwalior into a barrier free and disabled friendly city. Armstrong Pame- built Peoples Road. Compassionate Kozhikode Operation Suleimani to feed to poor by Prasanth Nair. Wall of kindness to provide useful goods to needy. Dharmveer Jakhad has made aapni pathshala to help the children of migrant labor in education.

**The Rules and Regulations provided to all the civil servants are same, yet there is difference in the performance. Positive minded officers are able to interpret the Rules and Regulations in favour of the case and achieve success, whereas negative minded officers are unable to achieve goals by interpreting the same Rules and Regulations against the case. Discuss with illustrations. UPSC IAS Mains 2022 General Studies (Paper – 4)**

The Rules and Regulations are made to achieve the common good and to ensure the uniformity in administration. However, despite the rules being same for all civil servants such as conduct rules 1961, they differ in performance. This difference is the outcome of the differing attitude of civil servants to approach a particular case as well as the idea of civil service as a whole.

Edmund Burke remarked that “The lines separating right from wrong or good from evil, are not like the fine lines of geometry”. They are broad, deep and permit exceptions. Hence, the officer on the spot alone is best equipped to decide how to achieve the object of the rules and regulations he/she is trying to implement.

The interpretation and implementation of rules & regulations hence depends on the moral conscience and discretion, enjoyed by an officer. Conscience is an intellectual judgement and more than a decision. Civil servants enjoy a wide array of discretionary powers. Administratively, use of discretion also assumes possession of higher wisdom as required by the circumstances.

Examples/ Illustrations:

1. SC in recent times said it wants CEC of strong Character like The Late TN Sheshan. The wind of electoral reforms to sustain the democratic spirit which TN Sheshan brought in like introduction of MCC, Votes IDs etc was not done by his predecessors holding the same office (of same rules and regulations).
2. In the recent past, Kavitha Ramu, IAS of TN cadre paved the way for Dalits to enter the village temple in Pudukkottai District. She initiated action against casteist culprits under “the SC, ST (Atrocities prevention) Act 1989” and arrested them. Inhumane casteist acts like adding human excreta into the water tank used by Dalits, were existent in that area’s for ages. However, despite receiving representations from the disadvantaged sections here, her predecessors failed to initiate needful action.

Teleological ethics says that we don't need standards to govern human action; the human intelligent alone is capable of knowing and judging.

**It is believed that adherence to ethics in human actions would ensure in smooth functioning of an organization/system. If so, what does ethics seek to promote in human life? How do ethical values assist in the resolution of conflict faced by him in his day-to-day functioning?. UPSC IAS Mains 2022 General Studies (Paper – 4)**

Working of organizations like ISRO, TATA shows that adherence to ethics in human actions ensures smooth functioning of an organization.

**Ethics in Human Life**

- **Integrity and Probity:** Ethics help maintain strong sense of purpose and conviction towards one's work
- g.; E Sreedharan and his role in the Metro Development and its success in the country.
- **Fulfilment of higher order needs:** Mahatma Gandhi's Satyagraha's role in the liberation of India.
- **Better decision-making ability:** Guided by the values of objectivity, impartiality, empathy and compassion
- for others.eg: deft shown by administration in handling Covid crisis despite shortage of resources
- Instill self confidence in various endeavours of life.

**Ethical values assistance in resolution of conflicts**

- **Impartiality:** For e.g., it prevents from favouring son over daughter in a fight even despite his mistake



- **Objectivity:** For e.g., Gandhi took the tough decision of withdrawing the NCM after the chauri-chaura incident
- Sense of responsibility: for e.g., my sister accepted act of stealing Rs 100 from my father's wallet when blame was being put on innocent house help.

Thus, ethics always help us in navigating the rough waters of life by being upright and having clear conscience, thereby, paving way for achieving the summum bonum (the highest good).

**What does each of the following quotations mean to you? (a) "Ethics is knowing the difference between what you have the right to do and what is right to do" - Potter Stewart. UPSC IAS Mains 2022 General Studies (Paper – 4)**

Ethics is a set of standards that society places on itself that guides its behaviour, choices, and actions. Ethics is systematic study of human actions from the point of view of their rightfulness or wrongfulness.

**Rights based approach** focusses on the right holders and their entitlements.

- Gives rise to legal obligation on the part of others.
- Bearer is entitled to rights as well as entitled to claim rights.
- Entitled to hold the duty bearer accountable.
- Has responsibility to respect the rights of others.
- Based on universal moral and legal-rational background.

For example, Nazi Germany considered it was their right to assert its dominance on the world, but it only brought death and misery upon the humankind.

However, ethics is not merely about the assertion of rights but also about focus on the procedural correctness of action.

- Violation of rights is penalized; however, violation of ethics has only moral sanction.
- Gandhiji said that rights are organically linked with performance of duties.
- Asserting the right may not always be ethically sound (e.g.; slavery in USA, forced labor in China)
- Deontology strongly adheres to the principle of righteousness of means instead of entitlement to commit an immoral act.

**“If a country is to be corruption free and become a nation of beautiful minds. I strongly feel that there are three key societal members who can make a difference. They are father, mother and teacher”. – APJ Abdul Kalam. UPSC IAS Mains 2022 General Studies (Paper – 4)**

Corruption is considered to be originated from the minds of the people. Peoples' thinking, ethical values, conduct and behaviour all makes a man either corrupt or be honest and uninfluenced.

- The basic and permanent solution to corruption involves inculcating more and more ethical and moral values since childhood that's building character.
- Character building since childhood is influenced by Parents, teachers, family and society etc. who play vital role in holistic development of the child.

#### Better socialisation

- A child is the reflection of her mother. Being the best friend and first teacher of child mother influences the child from walk to talk. Mother is the wealth of information for child.
- The child learns love compassion, forgiveness, humanity, equality, kind heartedness, respect, generosity and ethics from her mother and such traits reduce corruption.
- Father is the role model for most of the children. Qualities of leadership, responsibility, discipline, consistency, fearlessness etc. are developed in children under the influence of father. **Example:** Guru Teg Bahadur ji, set a great example for his son Guru Gobind Singh ji by sacrificing his life. Same traits we saw in Guru Gobind Singh ji who sacrificed his whole family for the fight in good against evil
- Good parental support helps child to be positive, healthy and good life long learner and behave in ethical manner involving moral values in entire his/her life.
- A child's first lesson on right and wrong comes from his/her parents – when he/she is taught not to steal, never lie and not to intentionally harm others.
- Teachers have a very important responsibility of laying the foundation of an individual's future.
- They are the most important nation builders as they are not only responsible for the intellectual nourishment of young minds but also for moulding the overall personality of children. **Example:** Ramkrishna Paramhansa was spiritual teacher of Swami Vivekananda and he transformed the character of vivekananda by his teaching.
- At young impressionable ages, teaching them about discipline, being responsible for their actions; inculcating values like team spirit, sharing, fair

play, cooperation a teacher sets the stage for a responsible citizen of the country.

Therefore, the nurturing done by parents and teachers determines the course of a nation whether it will be made of upright, moral and argumentative Indians or dull-minds ready to compromise on their ethics.

A poem by the 19th-century writer Charles Reade captures this: "Sow an act and you reap a habit; Sow a habit and you reap a character; Sow a character and you reap a destiny."

**Judge your success by what you had to give up in order to get it". - Dalai Lama.  
UPSC IAS Mains 2022 General Studies (Paper – 4)**

We all aspire for success; success means the status of having achieved and accomplished an aim or object. Being successful means achieving planned goals and desired visions.

Success provides confidence, security, a sense of well-being, the ability to contribute at a greater level, hope and leadership. Without success, you, the group, your company, your goals, dreams and even entire civilizations cease to survive.

However, success may come at a price, to attain success, one may have to give up something- leisure, preferred activities, sleep and relaxed way of life. Instead, one has to work long hours, be steadfast and overcome any setback with redoubled efforts. So, when one gains success, it has to be evaluated against what one had to sacrifice in order to achieve it.

- It may happen that to achieve success, personal relationships are compromised.
- Long-term goals are compromised for immediate success.
- Means v/s ends debate.
- Success at Kalinga came at huge humanitarian cost, this changed the outlook of King Ashok towards war forever
- Success at all costs (Hitler's invasion of Poland)
- If success is at the cost of compromising honesty and integrity, then it is not worthy.
- If success creates a conflict of interest, then it must be avoided, or conflict must be resolved first.

Thus, the statement of Dalai Lama holds true that success should be judged by what you had to give up in order to attain it.

