

## APPROACH – ANSWER: ABHYAAS TEST 3 - 2219 (2022)

1. *Fiscal policy can be a key tool to reduce income inequality as well as make the poorest and the downtrodden a part of the country's growth story. Discuss in the context of India. (Answer in 150 words)* 10

**Approach:**

- Give a brief introduction on fiscal policy.
- Discuss how it is a key tool to reduce income inequality and fight poverty.
- Conclude accordingly.

**Answer:**

**Fiscal policy** refers to the use of government spending and tax policies to influence economic conditions, especially macroeconomic conditions, including aggregate demand for goods and services, employment, inflation, and economic growth.

Fiscal policy can be a key tool in reducing income inequality as well as making the poorest and downtrodden a part of the country's growth in the following ways:

- **Taxation:** Taxes have a direct bearing on people's income, affecting their levels of disposable income, purchase of goods and services, consumption and ultimately their standard of living. In order to reduce income inequality, the following measures have been taken:
  - India has adopted a **progressive taxation system**. It involves different rates of income taxation as per different slabs, thereby taxing people as per their income levels.
  - Similarly, indirect taxation in India, such as the **GST has different rates** as per the type of goods or services. For example, essential items attract low taxes while luxury items such as washing machine, water parks, outdoor catering etc. attract higher tax.
- **Public Expenditure:**
  - Through the fiscal policy, the government ensures that public expenditure **directly intervenes for the welfare** of the society, especially the poor and downtrodden sections. For example:
    - ✓ Schemes involving **targeted cash transfers** such as PAHAL, National Social Assistance Programme etc. ensure that the poor sections of society have access to resources required for their sustenance.
    - ✓ Schemes involving **in-kind subsidies** through the **Public Distribution System, Mid-Day Meal, Sarv Shiksha Abhiyan, Jan Arogya Yojana etc.** ensure that the poor sections of the society have access to food, health as well as education and are able to progress with India's growth.
  - Fiscal policy impacts the **expenditure on key sectors such as infrastructure**, which has huge multiplier effects in the economy and is beneficial for all sections in their economic activities.
    - ✓ For example, **rural roads** directly impact the lives of the most vulnerable and disadvantaged sections in terms of engaging in entrepreneurial activities, access to effective maternal and child health care services etc.
  - Fiscal policy can intervene as per the need of the time to create a **safety net for vulnerable sections**, including giving emergency credit for small businesses. For example:

- ✓ Extending tax relief to parents and guardians of disabled persons in the latest Budget to help families who hitherto bore the brunt alone.
- ✓ Recognizing the importance of urban planning, mental health as well as green finance.

Fiscal policy is a key tool that links income distribution to future economic growth. The government must use it judiciously for redistribution as it empowers the downtrodden, but if not done correctly, overspending by the government and increased tax ratio **may discourage the upper income groups to invest and can stifle economic growth.**

**2. Digitizing land records will go a long way in ensuring land reforms as well as lessening the burden on the Indian Judiciary. Elaborate. Also, state the measures taken in this context. (Answer in 150 words) 10**

**Approach:**

- Briefly set the context by mentioning about digitization of land records.
- Write about the benefits that it will bring for the land reforms and the Indian judiciary.
- Mention steps taken by the Government in this regard.
- Conclude accordingly.

**Answer:**

Digitization of land records was introduced to computerise all land records to improve transparency in the land records maintenance system, digitize maps and surveys, update all settlement records and minimize the scope of land disputes.

Digitization of land records is important for land reforms as explained below:

- According to the Seventh Five Year Plan document, **“Land records form the base for all land reform measures** and, therefore, regular periodic updating of land records is essential in all states.”
  - The Eight and Ninth Five Year Plan stated that planning and maintaining of land records is a pre-requisite before any land reform policy is successfully implemented.
- Digitizing land records will provide **greater transparency in land titles** since property records could be placed in the public domain. Digitization would also **enable real time updates and changes in land record.**
- The transparent land records documents will help in explaining **ownership patterns, revenue administration models, form foundation of policies, budgets and welfare schemes** besides providing legal status to land owner/cultivator.
- Land digitization will **ensure clear land titles**, which will make it easier for the poor to borrow from the formal financial sector.
  - Clear titles of land ownership will ensure **easy monitoring by government officials, facilitating quicker transactions, and reducing disputes.**
  - **Disputed and unclear land titles hamper the chances of securing agricultural credit by farmers**, thus proper investment in land does not happen.

Further, **setting the land records right using digitization will help the judiciary** as highlighted below:

- As per study by the **World Bank, nearly 66% of litigations pending in Indian courts are related with land disputes** and subsequent crimes.
- A **NITI Aayog paper** suggests that land disputes on an average take about 20 years to be resolved. Land disputes add to the **burden of the courts, tie up land in litigation**, and further impact sectors and projects that are dependent on these disputed land titles.
- Due to the lack of maintenance of actual land records, there have been **litigations and property scams.** One of the biggest challenges faced was the land ownership issue, which led to property disputes.
  - Therefore, the government has decided to make land records available to all to check property frauds.

In making available land records to all and maintain it in an efficient manner, digitization **strikes as a natural choice** for its proven utility in other areas of governance. Further, it can help the

government officials check fraudulent transactions and make it available to the public to verify the land records with actual condition on the ground.

So, to successfully digitize land records, the Government has taken various steps, which include:

- **Bhoomi Project (Karnataka), 2000:** It was the first project in India started by Karnataka government to digitize land records. The necessary documents like the record of crops, rights and tenancy have been made available with the help of kiosks.
  - This project was soon followed by Andhra Pradesh and Tamil Nadu in 2001.
- **Dhatitree:** It is the first web-based land records management system in India implemented in the state of Assam.
- **Digital India Land Records Modernization programme (DILRMP):** Launched in 2008, its main aim was to computerize all land records, digitize maps, upgrade the survey and settlement records and sustain the same.
- **SVAMITVA scheme:** It aims to provide rural people with the right to document their residential properties so that they can use their property for economic purposes.
- **Unique Land Parcel Identification Number:** ULPIN is a 14-digit number that would uniquely identify every surveyed parcel of land and prevent land fraud, especially in the hinterlands of rural India, where land records are outdated and often disputed.
- **National Generic Document Registration System (NGDRS):** NGDRS is an in-house advanced software application for the registration of land and is a big step towards national integration and leap towards 'One Nation One Software'.
- **Integrated Land Management Information System (ILMIS):** Under this land-related information is available in a single window. It aims to integrate the land records database with the banks, financial institutions, circle rates, Registration Offices and other sectors to provide effective and efficient service deliveries by the respective offices.

Thus, digitization of land records is an essential step towards improving overall governance and the government has rightly taken many steps in this direction.

3. *It has been pointed out that competitive politics to fund mostly non-merit subsidies is pushing a few states in India to the brink of a deep fiscal crisis. In this context, discuss the need to rationalise the subsidy regime in India. (Answer in 150 words)* 10

**Approach:**

- Discuss the high proportion of subsidies given by states and substantiate with data.
- Highlight its impact on the fiscal situation.
- State arguments in favour of rationalizing subsidy expenditure.
- Conclude accordingly.

**Answer:**

According to India Ratings and Research, subsidy levels in several states in India remain at elevated levels despite tight fiscal positions. Chhattisgarh, Punjab, Rajasthan, Karnataka and Bihar were the top five states in terms of subsidies as a percentage of GSDP during FY19-FY22. Punjab, which is one of the most heavily indebted states of India, ranks second in terms of the subsidy given as percentage of GSDP and eighth in terms of absolute subsidy given during FY19-FY22.

The subsidies by themselves are not bad or unwarranted, but most subsidies are **non-merit subsidies** based on **populist policies**. Non-merit subsidies are all the additional subsidies that the Central and state governments provide beyond '**merit subsidies**' for food, education and health. Given the fiscal situation of the states, there is a need to rationalize subsidies regime in India due to the following:

- **High non-merit subsidy:** Some experts estimate that non-merit subsidies amount to **5.7% of India's GDP** with the bulk of this subsidy amount (4.1% of GDP) provided by states. They suggest that just rolling back these non-merit subsidies could free up fiscal space up to **6% of GDP**, which is equivalent to the entire fiscal deficit of both Central and state governments.
- **Public interest:** While in merit subsidies, the social benefit of private consumption exceeds the private benefit, there is no such correlation in non-merit subsidies.

- **Competitive subsidy regime:** The growing culture of doling out subsidies ahead of elections is making the state's fiscal situation unsustainable. For instance, Uttar Pradesh's fiscal deficit was budgeted 4.7 per cent of GSDP for FY22, its interest burden at 2.3 per cent and outstanding liabilities at 34.2 per cent of GSDP, and it is now staring at the impact of the poll promises that included free power for irrigation and two free gas cylinders for the poor every year.
- **Leads to hoarding:** According to the Economic Survey 2016, only 11% of fertilizer support expenditure was used by small and marginal farmers accounting for 85% of land holdings. With no meaningful restriction on how much subsidized-fertilizer can be procured by a farmer, it is the larger peasants who end up cornering almost a quarter of the subsidized input.
- **Subsidy driven agriculture becomes unsustainable:** According to the Dalwai Committee on Doubling Farmers' Income, subsidy-driven agriculture systems are not sustainable. The availability of cheap power has led to irrational use of groundwater.
- **Less public expenditure:** The public investments in agriculture as a percentage of agricultural GDP has declined from 3.9 per cent in 1980-81 to 2.2 per cent in 2014-15, while input subsidies as a percentage of agricultural GDP have increased from 2.8 per cent to around 8 per cent over the same period.

According to the ICRIER, if public money is spent on agricultural research and development, and infrastructural development, instead of being spent as non-merit subsidies, **marginal returns in terms of number of people brought out of income poverty** or higher agri-GDP growth is expected to be almost **5 to 10 times more**. For example, for every million rupees spent on agricultural research, 328 people are pulled out of poverty. In contrast, the same amount spent on power subsidies brings only 23 people out of poverty. Thus, rationalizing the present subsidy regime can lead to a more sustainable growth of the entire agricultural sector.

4. ***Micro-irrigation has tremendous potential in transforming farming into a profitable and sustainable venture. Discuss the given statement in the context of Pradhan Mantri Krishi Sinchai Yojana. (Answer in 150 words)*** **10**

**Approach:**

- Briefly explain the concept of micro irrigation and discuss the extent of water consumption in Indian agriculture.
- Discuss the role of micro-irrigation in making farming profitable and sustainable.
- Elaborate on the Pradhan Mantri Krishi Sinchai Yojana (PMKSY) in promoting micro irrigation.
- Conclude appropriately.

**Answer:**

Micro irrigation, broadly classified into **drip irrigation and sprinkler irrigation systems**, is the slow application of continuous drips, tiny streams or miniature sprays of water above or below the soil surface. It helps to reduce water consumption, growth of unwanted plants (weed), soil erosion and cost of cultivation.

Indian agriculture is facing myriad challenges in terms of water consumption like about 80% of agriculture water supply consumed by three crops i.e., rice, wheat and sugarcane, stress on ground water as around 84% of net irrigated area comes from ground water, increasing input cost etc.

**Role of micro irrigation in making farming a profitable and sustainable venture includes:**

- **Saving water:** By applying water directly to the root zone, it reduces loss of water through conveyance, run-off, deep percolation, and evaporation. It ensures higher water use efficiency of up to 75–95%.
- **Fertigation:** It comprises combining water and fertilizer application through irrigation. This ensures balanced nutrient application, 7 to 42% lesser fertilizer requirements, higher nutrient uptake and nutrient use efficiency.
- **Less labour requirement:** With low growth of unwanted plants (weed), micro-irrigation needs less labour requirement and thus reduction in input cost.
- **Irrigating degraded land:** Micro irrigation helps to bring degraded land under cultivation. It can use saline water for irrigation without causing salinity or osmotic stress to plants.



- **Reducing electricity consumption:** According to FICCI, drip irrigation saves an average of 30% on electricity.
- **Enhancing soil productivity:** Micro irrigation also helps to ensure optimum soil moisture. It has been found that the adoption of micro-irrigation systems helped boost the yield of fruits by 42% and vegetable crops by 52%.

Owing to the multi-dimensional benefits of micro-irrigation towards agriculture in terms of sustainability and profitability, the government, in 2015, launched the flagship scheme of **Pradhan Mantri Krishi Sinchai Yojana (PMKSY)**. Among other components like **watershed development, Har Khet Ko Pani, and Accelerated irrigation benefits programme (AIBP)**, it has micro irrigation related components, i.e., **per drop more crop**. It has the following provisions to promote micro irrigation across the country:

- **Financial assistance:** Up to 55% is available for small and marginal farmers and 45% for other farmers for adoption of micro-irrigation systems.
- **Funding pattern:** Funding pattern between the Union and state governments is 60:40 for all states, except the North-Eastern and the Himalayan states, for which the funding pattern is 90:10.
- **Awareness generation:** Information Communication Technology (ICT) interventions through the National e-Governance Plan in Agriculture (NeGP-A) to be made use of in the fields of water use efficiency and precision irrigation technologies.
- **Micro-irrigation devices:** Drip irrigation, sprinklers, pivots, and rain guns are being promoted on farms to supplement source creation activities such as tube wells, etc.

Despite the benefits of micro irrigation techniques and the government's efforts, it is **hampered by a few challenges** such as the energy crisis, lack of awareness, affordability, and declining landholdings and declining farm income. At the **manufacturing level**, the industry is grappling with cash flow issues due to delays from various state governments. The need of the hour is to **make funds available to the state governments** and undertake extensive demonstrations, training and awareness programmes to bring the Indian farming community abreast with micro-irrigation practices.

5. ***Given its vast resources and technical expertise, India can play a key role in assisting the Pacific Small Island Developing States (PSIDS) in dealing with the impact of climate change. Analyse. (Answer in 150 words)*** **10**

**Approach:**

- Highlight the vulnerability of the Pacific Small Island Developing States (PSIDS) due to global warming.
- Discuss how India can help these nations in fighting climate change with its expertise, particularly in low-cost renewable energy, transportation, and policy development.
- Discuss the potential benefits for India from PSIDS.
- Conclude accordingly.

**Answer:**

Pacific Small Island Developing States (PSIDS) are highly vulnerable to disasters emanating from the impacts of climate change, geopolitical tensions, and fluctuations in global energy markets. To overcome this, the PSIDS have committed to ambitious carbon reduction targets, and to adopting renewable energy and low carbon emission initiatives. However, they must contend with critical barriers, such as the lack of finance, capacity, and technology.

Given its vast resources and technical expertise, **India can play a key role in assisting the PSIDS and other SIDS in their climate fight in the following ways:**

- **Renewable energy and energy access:** With immense experience in low-cost renewable energy technologies for wind and solar energy, India could provide valuable inputs to the PSIDS to reduce their carbon footprint and achieve their NDC targets. It can also consider developing efficient electricity generation in the PSIDS through a large utility-scale grid like Rajasthan's Bhadla Solar Park.

- **Transformation in the transportation sector:** India has devised innovative strategies and policies for e-mobility, such as having a consolidated portal of all related information (e-AMRIT). Further, to develop maritime transportation in PSIDS, India can help in development of state-of-the-art electric boats. For instance, Water Metro fleet in India's Kochi could be replicated.
- **Policy development:** The PSIDS could also benefit from India's policy development experiences related to climate change and sustainable development. In this regard, India has implemented National Missions related to solar energy, water, sustainable agriculture, enhanced energy efficiency, and strategic knowledge for climate change.
- **Capacity building and training:** India can offer scholarships and skill development opportunities to people from the PSIDS for specialised training in renewable energy, climate change mitigation, and sustainable development.

There is also great potential for India to benefit from its collaboration with the PSIDS. **This can be discerned from the following:**

- **Soft power:** India stands to gain moral leverage by assisting the PSIDS in achieving their emission reduction targets.
- **Geopolitical advantages:**
  - The Pacific Ocean, where the PSIDS are located, borders globally and regionally important countries and offers major routes for trade and naval passage. Indian partnership with the PSIDS will mean that it will share critical geo-political space with the developed countries.
  - India, being a PSIDS-friendly country, has the potential to deepen its engagement with the United Nations (UN) and its associated forums. The PSIDS have voting rights in these organisations, and India could potentially leverage this advantage to secure a stronger position in the UN bodies.
- **Development of industries:** India can set up seafood processing plants and can explore these areas for deep-sea mining and sustainable opportunities in extracting manganese nodules, seafloor massive sulphides, and cobalt-rich crusts.

Sustained collaboration will benefit India and the PSIDS economically, geopolitically, and strategically. Additionally, India could use the learnings from cooperating with the PSIDS to explore opportunities in other SIDS and to benefit its uninhabited islands.

6. *The recent "Disaster Management Plan of Ministry of Panchayati Raj (DMP-MoPR)" aims to develop disaster resilience at the grassroots level. In this context, discuss the rationale behind the formulation of the Plan and highlight its key components. (Answer in 150 words) 10*

**Approach:**

- Introduce by explaining the context of the statement given in the question.
- Discuss the rationale behind formulation of disaster management plan at Panchayat level.
- Highlight the key components of the plan.
- Conclude accordingly.

**Answer:**

India has been vulnerable, in varying degrees, to many natural as well as human-made disasters on account of its unique geo-climatic and socio-economic conditions. Considering the important role that local communities can play in reducing vulnerabilities and early recovery, the **Ministry of Panchayati Raj has prepared the Disaster Management Plan** so that all Panchayati Raj Institutions (PRIs) along with communities can be prepared for any disaster.

The aim is to build disaster resilience at the grassroots level among the Panchayats and establish a framework to align the disaster management measures in rural areas to that of the National Disaster Management Authority.

**Rationale behind Disaster Management Plan at the panchayat level:**

- **Institutional proximity and capacity:** PRIs have proximity and capacity to involve **people and make them prepared** for countering disasters by involving them in all possible preventive and protective activities so that the impact of the disasters is mitigated.
- **Ensure Participatory Planning Process:** Such a plan would ensure a participatory planning process for disaster management through the Gram Panchayat Development Plan (GPDP) for addressing disasters across the country and initiate a new era of community-based disaster management.
  - People participation is crucial for identification of vulnerable groups and extent of their vulnerability as well as response measures such as reconstruction of damaged houses, crop protection measures, etc.
- **Social mobilization for traditional wisdom:** PRIs can act as catalysts to the **social mobilisation process** and **tap the traditional wisdom of the local communities** to complement the modern practices in disaster mitigation efforts.
- **Integration of all players:** PRIs can play a crucial leadership role in integrating all players like Non-Governmental Organisations (NGOs) and Community Based organisations (CBOs), which are engaged in various developmental activities at the grassroots level.

The DMP–MoPR aims to develop a culture of disaster resilience at the grassroots level through the following components:

- It incorporates many innovations in addition to being in **compliance with Disaster Management Act 2005, National Disaster Management Policy 2009, and guidelines issued by National Disaster Management Authority.**
- It **covers areas** such as:
  - Institutional arrangement for Disaster Management;
  - Hazard Risk, Vulnerability and Capacity Analysis; Coherence of Disaster Risk Management across Resilient Development and Climate Change Action;
  - Disaster Specific Preventive and Mitigation Measures-Responsibility Framework;
  - Mainstreaming of Community Based Disaster Management Plan of Villages and Panchayats.

The convergent and collective actions of DMP–MoPR to envision, plan and implement community-based disaster management plans, would be a game changer for our country in managing disasters comprehensively.

**7. Discuss the internal security implications emanating from the use of Emerging And Disruptive Technologies (EDT) by state and non-state actors. (Answer in 150 words) 10**

**Approach:**

- Explain the term Emerging And Disruptive Technologies (EDT).
- Discuss the internal security implications arising from the use of Emerging And Disruptive Technologies (EDT) by state and non-state actors against India.
- Suggest measures taken by India to ensure security from the EDT.
- Conclude accordingly.

**Answer:**

Fourth-generation technologies such as artificial intelligence (AI), big data, biotechnologies, quantum technologies, etc. propelling the fourth industrial revolution are alternatively referred to as **Emerging and Disruptive Technologies (EDT)**. **Emerging technologies** come with a revolutionary potential to alter the fundamental aspects of social and economic life. However, they require longer time horizons for maturation and their development trajectories are less certain.

Although it is argued that EDT will contribute to human wellbeing, these technologies also open new dimensions of the following security risks especially emanating from their use by both state and non-state actors:

- **Misinformation:** These technologies could be used to propagate fake news, which could have direct implications for peace, stability and law and order situation within the country. For example, technologies such as deep learning, neural networks, etc. could be used to make deepfakes, which could be used to propagate fake news.

- **Impact on democratic processes:** The fourth-generation technologies especially AI, big data, etc. could be used by state and non-state actors to influence the democratic outcomes by influencing voters' behaviour during the election processes. This issue came to light during the Cambridge Analytica scandal.
- **Threat to privacy:** EDTs could be deployed to extract the data of citizens and erode their privacy in the digital space. EDTs could be used by state and non-state actors to undertake widespread phishing attacks. These attacks could erode the public trust in the state to provide security and safety to the citizens, creating instability. For example, the SolarWinds hacks that were carried on the USA.
- **Security apparatus:** EDTs such as autonomous bots could be used by the state actors to threaten the security of the digital and critical infrastructure. The increasing use of the Internet of Things (IoT) could also increase vulnerability to such attacks. For example, the DTrack RAT virus was used to infect the "stand-alone" network of the Kudankulam Nuclear Power Plant.
- **Radicalization of the youth:** EDTs could be used to target and radicalize the youth of the country. Technologies such as big data, deepfakes, and AI could be used for this purpose.
- **Emerging threat of autonomous weapon systems:** Many state actors are undertaking the development of autonomous weapon systems, which deploy EDTs to cripple the cyberinfrastructure and cyber warfare capabilities of an enemy state.

Any future conflict between reasonably advanced actors will almost certainly include a cyber dimension. Thus, building capacity to protect the citizens and digital infrastructure is paramount to ensure internal security and stability for India.

In this regard, the Government of India has taken various measures including the establishment of the Indian Computer Emergency Response Team (CERT-In), which operates as the national agency for handling the country's cybersecurity, National Critical Information Infrastructure Protection Centre (NCIIPC), which is established to protect critical information of our country, Appointment of Chief Information Security Officers, etc.

**8. Identify the impediments faced by India in boosting its defence exports. Also, discuss the steps taken by the government in this regard. (Answer in 150 words) 10**

**Approach:**

- In the introduction, briefly highlight the current status of India's defence exports.
- State the key impediments faced by India in boosting its defence exports.
- Discuss the steps taken by the government to boost defence exports.
- Conclude accordingly.

**Answer:**

India's defence exports have increased more than six times between 2016-21, however, its share in global defence trade is just about 0.2%. In contrast, as per the Stockholm International Peace Research Institute (SIPRI), India (along with Saudi Arabia) emerged as the largest importer of arms between 2017-21, accounting for 11% of all global arms sales.

**Impediments faced by India in boosting its defence exports include:**

- **Limited participation of the private sector:** Most of India's defence exports are driven by the public sector undertakings like Hindustan Aeronautics Limited (HAL), Bharat Heavy Electricals Limited (BHEL), etc., which are often hamstrung by red tape, inefficiency, politicization, etc., while private players with adequate means just play a peripheral role in defence manufacturing.
- **Skewed allocation on defence R&D:** India spends less than 1% of its defence budget on research and development leading to an absence of effective designing and development capabilities (especially in critical technologies). Further, there is a lack of industry-academia-defence linkage.
- **Reputational setbacks:** The Indian defence industry has suffered reputational setbacks in the past. In 2005, Nepal alleged that the INSAS (Indian Small Arms Systems) rifles exported by India were of poor quality. Further, in 2015, Ecuador terminated the contract with HAL for locally



designed Dhruv Advanced Light Helicopters (ALHs), after four of them crashed within a short span of time.

- **Limited range of indigenously designed and developed equipment:** India has few indigenously designed, developed, manufactured, and proven major equipments and platforms to offer for export.
- **Low productivity:** Compared to major global defence manufacturers like the USA and Russia, the per unit production cost in India is higher, therefore, the end product is costlier and less attractive to foreign buyers.

**The steps taken by the government to boost India's defence exports are:**

- **Indigenisation support to MSMEs:** The Indian government has issued a positive indigenisation list of 209 defence items that can only be procured from domestic industry. Further, for the year 2022-23, about 68% of the capital outlay will be done from the domestic defence industry and of this amount, 25% will be solely for the private sector.
- **Scheme for Promotion of Defence Exports:** The scheme provides an opportunity to the prospective exporters to get their product certified by the government and get access to the testing infrastructure of the Ministry of Defence for initial validation of the product and its subsequent field trials.
- **Simplified defence industrial licensing:** The Department of Defence Production (DDP) has been notified as the Licensing Authority for export of various items and a single point of contact for exports of parts and components of Small Arms & Ammunitions.
  - The government has also introduced the **Open General Export License (OGEL)**, which permits the industry to export specified items to specified destinations without seeking export authorisation.
- **Specific role of the Ministry of External Affairs (MEA):** The MEA has facilitated Lines of Credit for foreign countries to import defence products. Further, defence attaches in Indian missions abroad have been empowered to promote and encourage defence exports.

Additionally, Corporatisation of Ordnance Factory Board into 7 defence PSUs will also help in boosting defence exports. Further, to meet the ambitious annual export target of around Rs 36,500 crores by 2025, India needs a pragmatic defence export strategy and a defence export promotion/facilitation agency to monitor the actual progress.

9. *Discuss the multiple issues associated with space debris. Also, state the initiatives taken in recent times to tackle this menace. (Answer in 150 words)* 10

**Approach:**

- Introduce by explaining what space debris are.
- Discuss the risks associated with space debris.
- Mention recent initiatives to tackle space debris.
- Conclude accordingly.

**Answer:**

Space debris, also known as **space junk**, refer to man-made objects in orbit around Earth, which no longer serve a useful purpose. It can refer to big objects such as dead satellites that have failed or been left in orbit at the end of their mission. It can also refer to smaller things, like bits of debris or paint flecks that have fallen off a rocket. According to a report by NASA's Orbital Debris Program Office, there are 25,182 pieces of space debris, of sizes larger than 10 cm, in the lower earth orbits, which are within 2,000 km of earth's surface.

These space debris impact the sustainability of outer space due to following issues associated with them:

- **In-orbit risks:** The rising number of space debris increases the potential danger to all space vehicles, especially to ones with humans aboard as these junks travel at speeds up to 6-8 km/second, which can cause significant damage upon collision.
- **Increased Cost:** Satellite operators in the geostationary orbit have estimated that protective and mitigation measures account for about 5-10% of mission costs and for lower-Earth orbits the cost is even higher.

- **Interference with Scientific and other observations:** The presence of manmade objects in space complicates the observations of natural phenomena as it disrupts the reception of radio telescopes and distorts photographs from ground based telescopes.
- **May affect spaceflight:** Space debris may lead to significant problems for spaceflight around Earth. The risk would be highest for objects orbiting at an altitude of around 1,000 kilometres, which is used for communications and Earth observation.

#### Initiatives taken to tackle this menace:

- **Inter-Agency Space Debris Coordination Committee's Space Debris mitigation guidelines** covering the overall environment with focus on limiting debris released during normal operations and post mission disposal.
- **The UN Committee on the peaceful uses of Outer Space** concluded various international treaties dealing with issues like liability for damage caused by space objects.
- **Japan's Aerospace Exploration Agency and European Space Agency** have partnered with start-ups to help with removal of space debris.
- In India, **Digantara**, a company incubated at the Indian Institute of Science (IISc) in Bengaluru, aims to combat the growing problem of space debris by developing the country's first space-based surveillance platform.
- The Indian Space Research Organisation (ISRO) has initiated '**Project NETRA**' to monitor space debris. The domestic surveillance system would provide first-hand information on the status of debris, which would aid further planning on protecting space assets.
- Some international steps like the British satellite **Remove DEBRIS** was launched in 2018 and deployed from the International Space Station (ISS) for removing space debris through methods like capture with a net and capture with a harpoon.

There are many associated political, legal, and regulatory issues concerning space debris that need to be considered to get a complete understanding of the problem and its solution. The emerging private sector could be encouraged to deal with space debris with a set of guidelines to ensure the sustainability of outer space with optimum utilisation of resources.

#### 10. *The adoption of Open Network for Digital Commerce (ONDC) in India is expected to make e-commerce more inclusive and accessible for consumers. Discuss. (Answer in 150 words) 10*

##### Approach:

- Provide a brief background of the Open Network for Digital Commerce (ONDC) in India.
- Discuss how the ONDC would make e-commerce more inclusive and accessible for consumers.
- Conclude by briefly highlighting the associated challenges and their resolutions.

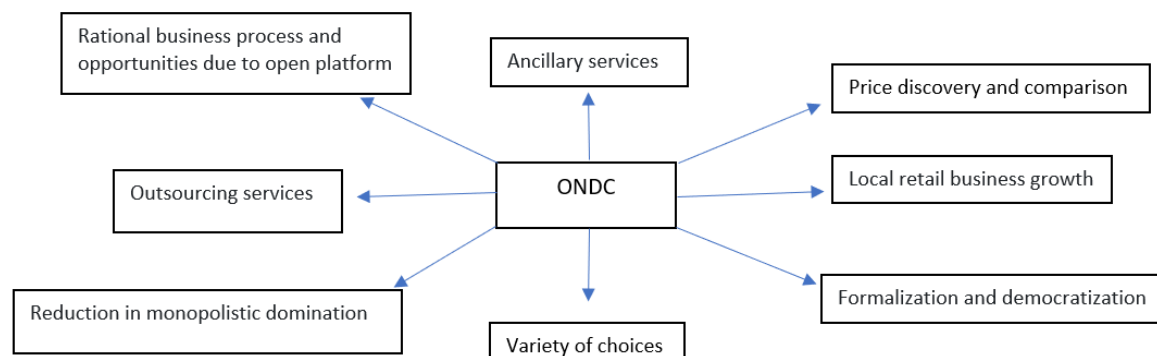
##### Answer:

India's e-commerce sector is expected to reach \$111.40 billion by 2025 from \$46.20 billion in 2020, growing at a 19.24% CAGR. To make it more inclusive and accessible, the government recently launched the Open Network for Digital Commerce (ONDC). It is an initiative aiming at **promoting open networks for all aspects of exchange of goods and services** over digital or electronic networks and is based on **open-sourced methodology**, using open specifications and open network protocols independent of any specific platform.



At present, the digital commerce model in India is platform-centric. It means that the buyers and sellers have to use the same platform or application to be digitally visible and do a business transaction. ONDC, on the other hand, would use **open protocols** to create public digital infrastructure in the form of open registries and open network gateways, so that the providers and consumers can use any compatible application of their choice for exchange of information and carrying out transactions.

It is expected that ONDC has potential to make e-commerce more inclusive and accessible, as it helps to ensure the following:



- **Check domination of e-commerce platforms:** It can **check domination** of the e-commerce market by a few large platforms, such as Amazon and Flipkart, which have been accused of **discriminating** among sellers on their platforms and **promoting** certain seller entities in which they hold indirect stakes.
- **Level-playing field:** It will enable **large-scale democratization of digital commerce** by providing a level-playing field to both large and small merchants in the country. Small businesses would be able to use any ONDC compatible application instead of being governed by specific platform-centric policies.
- **Wider access to sellers (especially kirana store owners):** Adopting ONDC will help small businesses like kirana stores to standardize operations like cataloging, inventory management, order management and order fulfillment, thereby making it simpler and easier for small businesses to be discoverable over networks and conduct business.
- **Freedom of choice to consumers:** Since consumers can discover any seller, product or service by using any compatible platform and choose their preferred local businesses, it will increase competition and will eventually help in the availability of products at competitive/cheaper prices.
- **Overall development of the sector:** It is expected to digitize the entire value chain, standardize operations, promote inclusion of suppliers, derive efficiencies in logistics and enhance value for consumers.

However, the biggest challenge in this regard is that the local sellers would have to compete with the quality products and services offered by the big players. In this context, the Department for Promotion of Industry and Internal Trade (DPIIT) needs to build a seamless platform which is user-friendly and is capable of giving a better shopping environment, and develop a swift dispute resolution mechanism to enhance credibility of the platform.

11. ***While an agreement was recently reached at the WTO on a deal to curb “harmful” government fisheries subsidies, certain concerns raised by India suggests that the matter will require further negotiations. Discuss. (Answer in 250 words)*** **15**

**Approach:**

- Give a brief background about the deal reached at the WTO regarding harmful government fisheries subsidies.
- Highlight the provisions of the deal.
- Bring out the various concerns raised by India.
- Conclude accordingly.

**Answer:**

The **WTO Agreement on Fisheries Subsidies**, adopted at the 12th Ministerial Conference (MC12) in June, 2022, marks a major step forward for ocean sustainability by **prohibiting harmful fisheries subsidies**, which are a key factor in the widespread depletion of the world’s fish stocks. It represents a historic achievement for the membership as the first Sustainable Development Goal (SDG) target to be fully met, the first SDG target met through a multilateral agreement, the first

WTO agreement to focus on the environment, the first broad, binding, multilateral agreement on ocean sustainability, and only the second agreement reached at the WTO since its inception.

The new Treaty includes a set of rules prohibiting **harmful subsidies** in the following provisions:

- Under **Article 3**, governments agree not to provide subsidies to fishing vessels and operators that have been found to engage in **illegal, unreported and unregulated (IUU)** fishing.
- Under **Article 4**, governments agree not to subsidize the fishing of fish stocks that are in an **overfished condition**. This rule includes an important qualifier, however, that allows subsidization to continue when the subsidies themselves, or other management measures are implemented to rebuild fish stocks to a sustainable level.
- Under **Article 5**, WTO members agree not to provide subsidies to **fishing and fishing related activities on the high seas** that are **outside the competence of a regional fisheries management organization**.

Additionally, governments have agreed to exercise **special care** when they provide subsidies in situations **where the subsidizing government has less control over the impact** of fishing it subsidizes. The deal also includes new rules on transparency.

This deal is opposed by India over a few issues as India's fishery sector is traditional and small-scale in nature. Various concerns regarding the deal raised by India are as follows:

- India **demands a balance between current and future fishing needs** of developing countries as well as **effective special and differential treatment (S&DT)** keeping in mind their developmental needs. Any initiative in this regard should be informed by the Marrakesh Agreement.
- India has stated that WTO members should not repeat the mistakes made during the **Uruguay Round**, which allowed **unequal and trade-distorting entitlements** for select developed members, particularly in agriculture.
- India has also raised the matter that subsidies like income and livelihood support during the seasonal no-fishing for regeneration of fish stock and provision of social security nets to socially disadvantaged fishing communities cannot contribute to overfishing.
  - India barely **gives USD 15 per fisher family subsidy** a year. On the other hand, there are countries, which give subsidies as high as **USD 75000** to one fisherman's family, which shows the extent of disparity that is sought to be institutionalized through the current fisheries text.

Further, India has urged that distant water fishing nations should be subject to a moratorium on giving any kind of subsidies for 25 years for fishing or fishing related activities beyond their Exclusive Economic Zone (EEZ). The issues raised by India and other developing countries highlight the need for a balance considering the aspirations of developing countries and least developed countries in this regard.

12. *Despite the advantages that are associated with the hybrid annuity model (HAM) in the road construction sector, the interest in it has moderated due to various reasons. Discuss. (Answer in 250 words)* 15

**Approach:**

- Give a brief introduction about the hybrid annuity model (HAM).
- Highlight the advantages associated with HAM in the road construction sector.
- Explain the various issues due to which interest in it has moderated.
- Give a brief conclusion.

**Answer:**

**Hybrid Annuity model (HAM)** is a type of public-private partnership (PPP) model in which the government invests 40% of the construction cost and the balance comes from the private developer for which fixed payments (annuity) with a profit margin are paid to the developer. It is a mix of engineering, procurement and construction (EPC) and build-operate-transfer (BOT) formats.



### Advantages of Hybrid Annuity Model:

- **Reduced risks for concessionaires:**
  - When compared to the traditional BOT model, the government funding will **reduce the upfront financial burden** on concessionaires.
  - The **revenue risk** and the tolling rights will be retained by the government while the private player bears **construction, operation and maintenance risks**.
  - The authority is required to **expedite the process for handover land and providing necessary approvals**, thereby taking care of the major sources of delay and stalling of projects.
  - The **cash flow is assured** in the form of annuity payments during the operational phase.
  - Cost overruns are tackled due to provisions for **inflation adjusted project costs**.
- **Ease pressure on the NHAI:** Compared to EPC projects, HAM eases the cash flow pressure on the National Highways Authority of India (NHAI) as it needs to provide only 40% funding spread over the 30-36 months of construction period, and remaining 60% over 15-20 years of the concession period in the form of semi-annual payments.
  - The authority is entitled to collect toll during the operational period, which is expected to form a good source of revenue against payment made to concessionaires in the form of annuities.

### The reasons behind moderation of interest in HAM include:

- Banks are finding it difficult to lend to infrastructure groups because of rising **non-performing loans**, due to which they are **forced to follow strict lending norms** under **Prompt Corrective Action**.
- The **bidding scenario under HAM has displayed a skewed trend**, with large players bidding much more aggressively for road projects compared to smaller players. Smaller developers who bid aggressively struggle to secure funds later.
- Many companies have **taken more projects than they can complete**. In this situation, often banks are not able to lend because of the group exposure limit as the group has already availed the loan from banks up to the maximum limit.
- **Delays in providing the appointed date** or the effective starting date of a project by the NHAI to the developer or concessionaire have worsened the position of the parties involved. The average delay is about 5-6 months.
- Over-dependence on HAM is **adversely impacting the financial health of the NHAI**. The total debt of the authority was Rs 1.8 lakh crore as on March 2019, which is expected to surge to Rs 3.31 lakh crore by FY23.
- **Difficulty in achieving financial closure by companies** due to various reasons like aggressive bidding, stressed balance sheet with their portfolios already burdened with existing/delayed HAM projects, low equity commitment on their part, selective lending by banks etc.

In this context, the government has taken some measures such as eligibility criteria for bidders having a minimum net worth, awarding bids on the basis of Net Present Value (NPV) during the concession period and bid O&M cost during the operation period, rejection of negative O&M bids etc. This will ensure that investment in the road sector is spurred and it positively impacts GDP growth of the country.

13. *The existing MSP procurement regime is neither economically nor agro-ecologically sustainable. Elaborate. Also, evaluate the alternative approaches that can be adopted to improve the existing MSP regime. (Answer in 250 words)* 15

#### Approach:

- Briefly explain the MSP regime in the introduction.
- Highlight how it is neither economically nor agro-ecologically sustainable.
- List alternatives to the model being followed in India.
- Conclude appropriately.

**Answer:**

**Minimum Support Price (MSP)** is a form of **market intervention** by the central government **that insulates farmers against the unwarranted fluctuations in prices**; creates an incentive structure in order to **direct the allocation of resources towards desired crops** and; **insulates consumers against sharp price rise**.

However, the existing procurement regime is neither economically nor agro-ecologically sustainable:

- **Skewed policy:** The benefits of MSP have accrued to farmers of a few crops and regions. It has mostly been confined to four crops i.e. sugarcane, paddy/rice, wheat and cotton. MSP coverage accounts for nearly three-fourths of the country's sugarcane production, roughly 50% for paddy/rice, 40% for wheat and 25% for cotton.
- **Facilitates water intensive agriculture:** In addition to the four crops accounting for just over 22% of India's agricultural output by value, all four are water-guzzling. Almost 100% of sugarcane and wheat area in India is under irrigation. The same goes for paddy/rice grown in Punjab, Haryana, Telangana, Andhra Pradesh and Tamil Nadu.
- **Procurement related problems:** Almost 2/3<sup>rd</sup> of the cereal produce is taken through the MSP route leaving very little for the open market. This creates an overreliance of farmers on the MSP system and distorts the open market.
- **Incentivizes production beyond requirements:** MSP does not hold much value today when India has become surplus in cereals and sugar. Furthermore, data from successive National Sample Survey rounds points to declining or stagnant per capita household consumption of both cereals and sugar.
- **Risk aversion:** Overproduction of MSP crops has surprisingly coincided with periods of low price realizations on account of collapse of agri-commodities boom, demonetization and inflation-targeting policies. This demonstrates engendered risk aversion among farmers.

There are various alternatives to the existing model of MSP. These include:

- **MSP Model covering all crops:** Making MSP legally enforceable **on all crops** can potentially address the aforesaid distortions. Farmers can be assured of getting MSPs for at least the 23 officially notified crops. It should further be possible to fix MSPs in such a way to ensure higher returns on crops consuming less water. However, extending to more crops would have serious implications for the exchequer if it is backed by open-ended procurement.
- **Price deficiency payments (PDP):** PDP entails the government not physically buying or stocking any grain and simply paying the difference between the market price and MSP, in case of the former ruling lower. However, timely payments and quality checks on grain supply need to be done strictly.
- **Direct income support:** It would benefit farmers in the times of agrarian distress, that too without distorting markets. They have also been found to be more inclusive and promote more equity across farm sizes.
- **Area Planning:** Currently, farmers make plans according to their own needs, their limited knowledge of land and technology, labour and capital available. However, area planning by the government would enable production objectives to be set by demand, social or political imperatives and the existing situation in the country. This is a time taking process but would help in overcoming over-supply and falling price problems.

In agriculture, there is a high probability of both production and price risks. Therefore, a deliberation on ways to best make use of MSP for farmers must be taken.

**14. It is being argued that India is struggling with overflowing foodgrains in warehouses. Discuss the statement in view of the existing buffer stock policy of India. (Answer in 250 words) 15**

**Approach:**

- Briefly write about the existing buffer stock policy in India.
- Discuss whether India is struggling with overflowing food grains in warehouses.
- State the implications of the existing buffer stock policy.
- Conclude accordingly.

**Answer:**

Buffer norms refer to the level of stock in the Central Pool that is sufficient to meet the operational requirement of food-grains (for regular distribution under PDS) and exigencies at any point of time. As on 1<sup>st</sup> April, 2022, the Central pool had approximately **74 million tonnes (mt) of food grains which is 300% of the strategic and operational reserve norm of 21.04 mt**. Of this, 19 mt of wheat is over 2.5 times, and 55 mt of rice is nearly 4 times of the required stock.

Though during the COVID-19 pandemic, the huge buffer-stock has been of immense help to the government to fulfill its commitments under the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY), India is struggling to manage its overflowing food grains. This is because of the following reasons:

- **Residual food grains:** There is no pro-active, pre-defined, sustainable policy for the residual food grains. In general, such 'excess stock' can be liquidated by the government through export, open market sales or additional allocation to states. However, the following issues emerge:
  - **Export:** The policy towards international grain trade has been of an ad-hoc nature, with the domestic grain supply and price situation determining the export/import policy every year. Also, there have been frequent bans on grain export.
  - **The Open Market Sale Scheme:** If high buffer stock is released in the market, it may lead to a collapse in prices. This, in turn, will lead to farmers losing on fair price for their bumper harvest.
- **Financial implications:**
  - **Rising cost of operations:** The buffer-carrying costs, which include the cost of acquiring, storing, warehousing, stock maintenance etc. has increased more than double since 2001-02.
  - **Food subsidy:** Though, there has been a cut on the food-subsidy recently, it has grown more than 25 times (in nominal terms) during the last two decades.

**Other than these, the buffer-stock policy is also criticized due to:**

- **De-facto nationalization of the grain market:** With more than 75 percent of the marketable surplus procured by the government, very little grain is available for the open market. This lower market supply exerts an upward pressure on prices in the open market, neutralizing much of the consumer benefits that the subsidy provides.
- **Leakage:** ICRIER has reported that the existing procurement system has been highly 'leaky', with large amounts of grains being pilfered and diverted to the open market.
- **Inadequate coverage:** Against the NFSA target of 67%, only 59% of the intended beneficiaries are covered by the PDS at present.
- **Market distortion:** The bonus given by the states above the minimum support price (MSP) distorts the market and discourages private sale.
- **Other associated impacts:**
  - The policy of open-ended procurement of wheat and rice has adversely affected crop diversification.
  - Substantial groundwater depletion has occurred in states like Punjab and Haryana.
  - It was reported in 2020 that more than 95% of paddy farmers in Punjab and 70% in Haryana are covered under the government procurement system, while in case of major paddy producing states like Uttar Pradesh and Bihar, it is 3.6 and 1.7% respectively.

The food economy in India today faces the problem of plenty. The available public stocks of grains are much more than what the market or PDS can absorb. A temporary glut can be dealt with through measures such as lowering the issue price, diverting it to ethanol production and attempting to export if possible. However, if the surplus situation persists because of higher MSP and inability of the domestic market to adjust to each year's change in MSP, the need to re-formulate the agricultural price support policy framework may arise.

15. *Recently, the government has asked all ports to prepare a master plan in order to become 'mega ports' by 2047. In light of this, discuss the challenges faced by ports and suggest remedial measures in order to propel India's blue economy. (Answer in 250 words)* 15

**Approach:**

- Contextualize the answer by introducing 'mega ports' and writing their significance.
- Discuss the challenges faced by ports in India.
- Suggest remedial measures in order to boost the port sector in India.
- Conclude accordingly.

**Answer:**

A mega port can be called 'mega' because of three factors: the **cargo volume** it handles, the **economic value** it represents, or the **land and water surface** utilized, or **any combination of them**. Having mega ports helps develop the '**blue economy**', which according to the World Bank refers to sustainable use of ocean resources for economic growth, improved livelihood and jobs, and ocean ecosystem health. To achieve this, the government is working to make all ports as mega ports by 2047.

**However, the following are some of the major hurdles faced by the port sector in India:**

- **Low capacity:** Despite handling 90% of cargo by volume and 70% by value, the traffic handled at ports is far less than their capacity. For example, the capacity of 13 major ports is more than 1500 million tonnes per annum (MTPA) in 2021, but traffic handled at these ports was to the tune of around 670 MT during 2020-21.
- **Physical infrastructure:** Indian ports are plagued with issues like low productivity, high turnover and pre-berthing time, and high freight costs.
- **Digital infrastructure:** There is absence of a common online portal with end-to-end stakeholder coverage. The IT solutions work in isolation and do not interact with each other in the absence of a common integrated platform for information exchange.
- **Logistical bottlenecks:** The lack of expressway connectivity between major ports as well as industrial clusters, and high fuel cost make hinterland transportation inefficient and slow.
- **Labour issues:** The low productivity of ports is attributable to local labour being hired, which is often unskilled and operates inefficiently, thereby affecting the overall productivity and cargo traffic volumes handled.
- **Lack of competitiveness:** Due to high taxation and high compliance burden, the operational costs of Indian vessels are high.
- **Investment issues:** Despite 100% FDI and 10-year tax holiday to enterprises engaged in maintenance and operation of ports, a cumulative FDI of only US\$ 1.63 billion was received from April 2000 to March 2021.

**In order to address these challenges, the following measures can be adopted:**

- The government needs to open up the **dredging sector** to attract more players, particularly international players, to increase and **maintain draft depth** at ports to attract large vessels and enable them to become hub ports.
- There is a need to expedite the **completion of various projects under the Sagarmala programme**, especially those aimed at improving port connectivity, setting up coastal economic zones (CEZs), and establishing new ports.
- A comprehensive programme **to reduce the cost of movement of goods behind the borders** from hinterland to ports needs to be undertaken.
- There is a need for a **common digital platform**, which brings all stakeholders on a single platform proposed as the '**National Portal for Cargo Facilitation (NPCF)**.'
- The government and other stakeholders should enhance the **use of technology like big data, Artificial Intelligence** etc. in ports and, wherever feasible, draw lessons from successful global ports such as Rotterdam, Felixstowe, and Singapore to improve efficiency.

Liberalization of the sector is extremely crucial to build flexibility and agility—procedural, operational and financial. To constantly compete with the rest of the world, it is crucial that the terminal and equipment operators, ship owners, exporters and importers all work cohesively to meet the evolving demands of the sector.



16. *Inequality in income and wealth translates into carbon inequality. In this context, discuss the significance of addressing carbon inequality for India and suggest ways to achieve it. (Answer in 250 words)* 15

**Approach:**

- Start with explaining carbon inequality and explain how inequality in income and wealth translates into carbon inequality.
- Discuss the significance for India to address climate inequality.
- Suggest ways to address it.
- Conclude appropriately.

**Answer:**

Carbon inequality refers to the phenomena of the highly unequal distribution of carbon emissions throughout the world and within a country. This carbon inequality naturally translates from inequality in income and wealth because differences in consumption and people with disparate purchasing power opt for different goods and services with disparate energy footprints.

For instance, **according to the Oxfam report 2020**, the richest 1% emit more than twice as much CO<sub>2</sub> as the bottom 50% of the world. Further, **as per World Inequality report 2022**, the bottom 50 percent of Indians emitted about 1 tonnes of CO<sub>2</sub>, whereas the richest 10 per cent emitted about 8.8 tonnes of CO<sub>2</sub> per person in 2019.

**Significance of addressing Climate Inequality for India**

- **Strengthen India's case on multilateral platforms:** India has been advocating for a fair transition of the developing countries, with adequate time frame and financial assistance, for climate change adaptation and mitigation based on historical responsibilities.
- **Addressing unjust climate measures to promote carbon equity:** Climate policies have been disproportionately borne by low-income consumers in particular via carbon and energy taxes. For instance, uniform carbon tax across individuals in India leads to giving more polluting rights to wealthy individuals, who are less affected by an increase in carbon prices than the poorer sections. Thus addressing this inequality promotes carbon equity.
- **Achieving Paris climate agreement:** Tackling extreme inequality and targeting the excessive emissions linked to the consumption and investments of India's and world's richest people is vital to achieve Intended Nationally Determined Contributions (INDC) and keeping the 1.5°C Paris goal alive.
- **Designing effective climate policies:** The scale of transformation required to cut greenhouse gas emissions drastically cannot be attained if environmental and social inequalities are not integrated in the design of India's climate policies.
- **Disproportionately affects the poor:** Due to carbon inequality, minorities and low-income communities are disproportionately harmed by climate change's pernicious effects. For instance, vulnerable groups in India are disparately affected by the onset of heat waves, worsening air quality, and extreme weather events, which has ramifications for physical and mental health and financial well-being.

**Steps to address Climate Inequality**

- **Proper tracking of individual emissions** within countries with a systematic assessment of the beneficiaries and losers of climate policies should be carried out by public authorities.
- **Scaling up public investments in low-carbon energy** production infrastructures, transport and energy efficiency in order to ensure a fair transition and enable lower income groups to take greener decisions.
- **Progressive wealth taxes** on the ownership of polluting activities could accelerate divestments, reduce pollution levels of the wealthiest and generate much-need resources to scale-up investments in low-carbon infrastructures.
- **Implementing Global Carbon Incentive (GCI)**, under which every country that emits more than the global average of carbon emissions would pay annually an amount calculated by multiplying the excess emissions per person by the population and the GCI into a global GCI fund.

- **Incorporating principles of social dialogue** at all levels to ensure the wellbeing of workers in affected industries, women, low-income and marginalized groups.

Considering the rising global emissions level and the imminent dangers of global warming and extreme climatic conditions, a comprehensive plan for addressing carbon inequality is important by acknowledging not only the differentiated responsibilities and respective capabilities of developed and developing nations, but also those of wealthy and poor individuals everywhere.

**17. Despite increased and regular occurrences of landslides over the past decade in India, the dominant development paradigm has largely not been modified. Examine. (Answer in 250 words)** **15**

**Approach:**

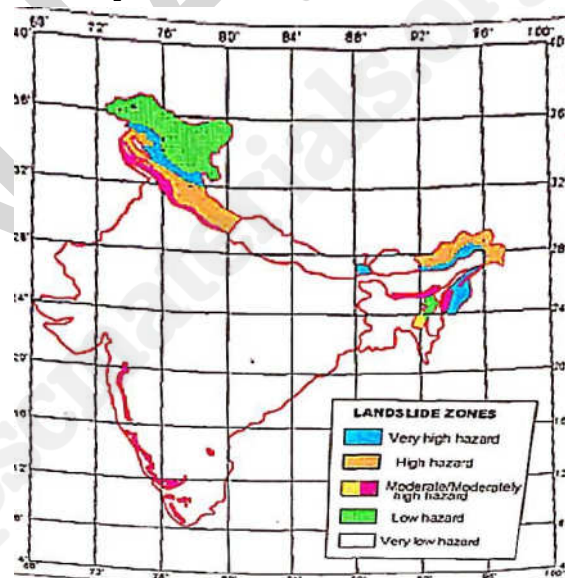
- Give a brief overview about India's vulnerability to landslides.
- State facts about increased and regular occurrences of landslides.
- Discuss how the development paradigm needed a shift in this context but still remains the same.
- Give a brief conclusion.

**Answer:**

Landslides have become a familiar feature, and seismic events threaten to increase their frequency and aggravate their impact in India. The **catastrophe becomes even more severe**, with mud, rocks and debris raining down. The **Landslide Hazard Zonation Map of India** reveals that over **12% of the country's region is prone to landslides**.

The **Himalayan states in northern India** and other **states with hills/ghat terrain** such as Kerala have registered the bulk of landslides in the last decade. Of all the world's landslides, 30% occur in the Himalayas, according to a South Asian Association for Regional Cooperation (SAARC) study. Also, according to government data, the number of such incidents in the **North-eastern states** is increasing. For instance, a **recent landslide at a railway construction site in Manipur** in July 2022 has claimed the lives of at least 34 people.

Despite increasing and regular occurrences of landslides, the dominant development paradigm has largely not been modified. The developmental model of the nation still prioritizes heavy engineered structures, massive infrastructure building and increasing economic activities irrespective of costs. **The following developmental components highlight the need of bringing a paradigm shift in developmental strategy:**



- **Deforestation** for human habitation, **mining** for meeting the increasing demand of resources, **and construction** in sensitive areas have been increasing in the recent years, putting more and more pressure on the soil, which gives way to landslides.
- **Dams and hydropower projects** that involve rock blasting, tree felling and inundating large spaces, jeopardize the integrity of mountain slopes. Further, these structures induce seismicity in the hilly terrain and damage the integrity of the soil as well as slopes.
- **Road construction in hilly terrains** modify the slopes and increase the vulnerabilities of such areas during episodes of heavy rainfall.
- **Increasing unsustainable tourism practices** in mountainous regions at an unscrupulous pace damage the ecology as well as put extra pressure on the existing resources, thereby exacerbating such disasters.

The above-mentioned activities are also **intensifying climate change**, which in turn, is responsible for growing vagaries of nature in the form of intensified rainfall, cloudbursts and speedy winds, which further makes the areas vulnerable to landslides. In this context, it is pertinent that the dominant development paradigm **focuses on the following aspects:**

- **Restriction on construction and other developmental activities** such as building of roads and dams in the high vulnerability zones, should be strictly enforced.
- There should be a **shift from static to dynamic planning and green infrastructure** for developing sustainable, creative and humane settlements.
- **Limiting agriculture to valleys and areas with moderate slopes**, and control on the development of large settlements in the high vulnerability zones, should be enforced.
- Policies should focus on **transition from shareholder to stakeholder business**, which could exemplify how eco-efficiency, green marketing and social responsibility offer a comparative advantage.
- **Local government and civil society cooperation should be strengthened** for increasing the sense of ownership and responsibility among the people for their resources.
  - Positive actions like **promoting large-scale afforestation programmes** and **construction of bunds to reduce the flow of water** can be taken to mitigate the impact of landslides.
- **A horizontal drain can be used to drain water to reduce pressure on the soil.** Holes are drilled into a cut slope or embankment. They are then encased with a liner comprised of slotted-plastic or perforated-metal.

A landslide hazard is one of the more difficult ones to address, as it involves extensive risk analysis and geo-technical investigations, in addition to risk maps. Thus, early warning systems, evacuation plans, and restriction of construction should be given importance along with structural mitigation measures to reduce the impact of such a hazard.

- 18. India needs a smart border management system to balance legitimate cross border flows with national security interests. Discuss. Also, highlight the initiatives taken by the government in this regard. (Answer in 250 words) 15**

**Approach:**

- Briefly define smart border management for India.
- Mention the need for a robust smart border management system.
- Highlight the steps taken by the government in this regard.
- Conclude with a way forward.

**Answer:**

Smart border management calls for a **balanced use of humans and technology to facilitate the movement of people and goods across borders**, while **controlling and preventing malicious acts such as infiltration, cross-border terrorism, illegal immigration and smuggling**. It entails a **coordinated and focused approach** by the country's leadership, bureaucracy, security forces and economic agencies of the nation.

**Need for a smart border management system in India:**

- **Long borders:** India has a long land and coastal borders of approximately 15000 Km and 7500 km respectively. Thus, managing the border in itself is a very complex task.
- **Unsettled boundaries:** The conflicts with China (Aksai Chin); Nepal (Kalapani dispute), etc. indicate the need for a robust and smart border management.
- **Difficult and diverse terrain:** Indian borders run through plains, hills and mountains, deserts, riverine territories and marshes, which make manual supervision and surveillance a tedious task.
- **Poor connectivity to hinterland:** This creates a major challenge, especially in case of standoff as seen in the recent past. It becomes very difficult to ensure the supply of important articles to remote border areas due to absence of infrastructure.
- **Illegal migration:** Several of India's neighbours are undergoing political and economic instability, which has increased the inflow of migrants. This leads to an altered demographic ratio and communal tensions within the society.
- **Crimes and syndicates:** There is rampant smuggling of contrabands, arms and ammunition drugs etc. in the border areas.

Countries in India's neighbourhood share a common history with it. There is a socio-cultural connection between the people of India and many of these countries. Thus, smart border management will ensure proper security while enhancing the cross-border movement of not only people but also of goods and services. In this regard, the government has undertaken following initiatives:

- **Comprehensive Integrated Border Management system (CIBMS)** has been employed.
  - It is a five-layer security system with the objective of implementing the **D4R2 (deter, detect, discriminate, delay, response, recover)** principle on the border.
  - The CIBMS uses low-light CCTV cameras, thermal imaging, night-vision devices (NVDs), surveillance radars, laser beams and underground monitoring sensors to detect infiltration via land, underwater, air and tunnels.
  - It includes the **integration of manpower, sensors, networks, intelligence** and command & control solutions to improve situational awareness at different levels of the hierarchy in the border guarding forces to facilitate prompt and informed decision making and quick response to emerging situations.
- **Perimeter Intrusion Detection System (PIDS)** comprising multiple types of sensors and/or Long-Range Reconnaissance and Observation Systems (LORROSSs) have been installed or are in the process of deployment in strategically crucial regions. These have proven to be effective in the detection, identification, classification and recognition of intruders or other threats.
- The Department of Border Management (DoBM) is implementing the **Coastal Security Scheme (CSS)** in phases with the objective of strengthening the infrastructure and capabilities of Coastal Police for the patrol and surveillance of coastal areas, particularly shallow areas close to the coast.
- To address the issue of poor connectivity of the border areas, the government has undertaken **phase-wise construction of road links** along the border with the involvement of BRO, CPWD, PWD, etc.

The Government has taken necessary steps in this direction, yet there is a need to ensure that all the stakeholders work in close coordination with each other. Any lapse in border management can lead to major security issues as found out during the Mumbai attacks of 2008.

**19. Establishing linkages between globalisation and money laundering, discuss the initiatives taken at the national and international levels to combat it. (Answer in 250 words) 15**

**Approach:**

- Introduce by highlighting the meaning of money laundering and globalisation.
- Explain the relationship between globalisation and money laundering.
- Enlist the measures taken at national and global level to combat money laundering.
- Conclude accordingly.

**Answer:**

Money laundering is the process of concealing the source of money obtained illegally by passing it through a complex sequence of transfers or commercial transactions. While globalisation is the process where the world is becoming increasingly interconnected as a result of massively increased trade and cultural exchange.

**Linkages between globalisation and money laundering:**

- The growth in international trade, the expansion of the global financial system, the lowering of barriers to international travel, and the surge in the internalization of organized crime have combined to **provide the source, opportunity, and means** for converting illegal proceeds into what appears to be legitimate funds.
- The **deeper "dirty money" gets into the international banking system**, the clandestine nature of money-laundering makes it difficult to estimate its origin.
- The number of **developments in the international financial system** during recent decades have made the three **F's - finding, freezing and forfeiting** of criminally derived income and assets all the more difficult.



- These developments include “**dollarization**” of **black markets**, the general trend towards **financial deregulation**, the **progress of the Euro market** and the **proliferation of financial havens**.
- Fuelled by advances in technology and communications, the financial infrastructure has developed into a perpetually operating global system in which “**megabyte money**” (i.e. money in the form of symbols on computer screens) can move anywhere in the world with speed and ease.
- Rapid developments in financial information, technology and communication **allow money to move anywhere in the world with speed and ease**.

**Faced with the above challenges, following efforts have taken:**

**At the international level:**

- **The Vienna Convention:** It promotes **international cooperation in investigations** and makes **extradition between member states** applicable to money laundering.
- **The Financial Action Task Force (FATF):** It helps to build the **capacity to fight terrorism and trace terrorist money and to successfully investigate and prosecute** money laundering and terrorist financing offences.
- **Basel Committee’s Statement of Principles:** It seeks to **deny the banking system to those involved in money laundering** by the application of the four basic principles namely, identifying the customer, compliance with the laws, cooperation with Law Enforcement Agencies and adherence to the Statement.

**At the national level:**

- **Prevention of Money-laundering Act, 2002:** The Act and Rules impose obligation on banking companies, financial institutions and seeks to prevent and control money laundering, confiscate and seize the property obtained from the laundered money.
- **Financial Intelligence Unit:** It receives financial information pursuant to country's anti-money laundering laws; analyses, processes and disseminates it to appropriate national and international authorities, to support anti-money laundering efforts.
- **The Black Money (undisclosed foreign income and assets) and Imposition of Tax Act, 2015:** To deal with the menace of the black money existing in the form of undisclosed foreign income and assets by setting out the procedure for dealing with such income and assets.
- **Benami Transactions (Prohibition) Amendment Bill, 2015:** It aims to expand the definition of Benami Transactions and specifies the penalty to be imposed on a person entering into a Benami transaction.
- **Anti-money laundering/counter financing of terrorism–guidelines for general insurers, 2013:** Each insurance company has to establish and implement policies, procedures, and internal controls/audit in its AML/CFT program. Insurers are also required to maintain records of their transactions under these guidelines.

Money laundering has become a quintessential problem and combating it has become an international priority. The efforts such as increasing financial literacy, promoting KYC norms and cashless digital transactions etc. are additional steps in the right direction to tackle money laundering.

20. *There have been arguments that India needs to review some of its past assumptions about the nature of outer space and contribute to the development of new global norms. In this context, analyse India’s stand in relation to the Artemis Accords. (Answer in 250 words)* 15

**Approach:**

- Introduce with the need to review India’s past assumptions regarding outer space in a new global paradigm.
- In this context highlight the Artemis Accord.
- Elaborate on the reasons for and against India joining the Artemis Accords.
- Conclude with a way forward.

**Answer:**

India signed the United Nations Office for Outer Space Affairs (UNOOSA) '**Moon Agreement**' of **1979**, which seeks to promote rule of law in this human endeavour and says that human activities on the Moon should be peaceful, never hostile and in accordance with the international law.

However, countries like the US, Russia and China have not signed the agreement due to their ambitious moon programme. For e.g. China expects the zone to generate an astonishing 10 trillions USD through space based services and manufacturing, and extraction of extra-terrestrial natural resources. As India is its signatory, it limits and restricts India's role on Moon. Therefore, it needs to review its past assumption regarding outer space in this new global paradigm and should seek to protect its interest.

In this context, Artemis Accords offers both opportunities and concerns for India. Artemis Accords is a **set of guidelines surrounding the Artemis Program** for crewed exploration of the Moon. This agreement is for **lunar exploration and beyond**, with participation of both international partners and commercial players. The accords describe a shared vision for principles, **grounded in the Outer Space Treaty of 1967 to create a safe and transparent environment**.

**Factors that prompt India to sign the Artemis Accords**

- **Enhanced space cooperation among Quad countries:** Countries such as USA, Japan and Australia are already signatories of the Accords.
- **Attracting more investments:** By being a part of the Accords, India's space companies could become part of a global supply chain. This would also help attract investment capital towards Indian space start-ups.
- **Increased cooperation and learning:** There are various dependencies in advanced space technologies that make up an important background to understand the context in which India is operating.
  - India's **lunar programme has had limited success**. It has two missions in orbit. The first and only mission to the **surface** failed in September 2019.
  - India is **also collaborating with Japan on a future lunar mission, called LUPEX**, to the Moon's surface. Japan is also a signatory to the Artemis Accords.
  - India also **depends on Ukraine for semi-cryogenic engines** – and Ukraine is a signatory to the Accords.
- It will provide several **opportunities to learn about interplanetary missions** and human spaceflight.

**Challenges that India faces in signing the Artemis accords**

- **Reinforcing US Hegemony:** US promotion of the Accords outside of the "normal" channels of international space law is a cause of consternation for some countries.
- **Harbinger of change in space governance:** The Accords are bilateral agreements between USA and the countries, which are part of Artemis program and these Accords are not binding instruments of international law. But, by establishing practice in the area, they could have a significant influence on any subsequent governance framework for human settlements on Mars and beyond.
- **Diplomatic challenges:** India has had a traditional partnership with Russia, which recently partnered with China in its International Lunar Research Station (ILRS) initiative.
- **Focus on indigenous programmes** may be compromised as India may need to align its interests with the interests of other countries.

**India's decision** to sign the **Artemis accords**, or for that matter any other bilateral space agreements, should completely be based **on the merits of the proposal** i.e. whether proposals meet India's expectations or not. All such decisions can be complemented with initiatives like confidence building measures with the US, strategic balancing with Russia, pursuing indigenous programs and a strong regulatory framework.

**Copyright © by Vision IAS**

*All rights are reserved. No part of this document may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior permission of Vision IAS.*