



INSIGHTSIAS

SIMPLIFYING IAS EXAM PREPARATION

INSTA MINDMAPS



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APRIL 2023

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General Studies – 1

Topic: Population and associated issues

1. Reaping India's Demographic Dividend

Introduction

- The **UN report, World Population Prospects 2022**, forecasts that the world's population will rise to 9.8 billion in 2050.
- India is getting a demographic dividend that will last nearly 30 years.
- How it handles this windfall will determine if it will rise to the top of the economic league table or continue at lower middle-income levels.

India's Present State

- With falling fertility, rising median age, a falling dependency ratio, **India is in the middle of a demographic transition.**
- This provides a window of opportunity towards faster economic growth.
- India has already begun to get the dividend.
- In India, the benefit to the GDP from demographic transition has been lower than its peers in Asia.
- Hence, there is an urgency to take appropriate policy measures.
- A nation's growth requires the productive contribution of all segments of society, particularly the children and the youth.
- Household and national investments in children and youth yield long-term returns.

India's Opportunities

- Share of India's working age population to total population will reach its highest level at 68.9% by 2030.
- By the year 2030, India's dependency ratio is projected to reach its lowest point at 31.2%.
- With a relatively young population, **India not only gets a competitive advantage in terms of workforce but also an opportunity to unleash the consumption power of a young population.**
- India has the largest pool of graduates with a Science, Technology, Engineering and Mathematics (STEM) background.
- India's large pool of working-age population therefore provides a **skill-based talent to address the needs in India and globally.**

International Practice

- Countries like Singapore, Taiwan and South Korea have shown us how demographic dividend can be reaped to achieve incredible economic growth.
- This is by **adopting forward-looking policies and programmes to empower the youth in terms of their education, skills and health choices.**
- South Korea's female workforce participation rate of 50% has been built on
 - legally compulsory gender budgeting
 - increasing childcare benefits
 - boosting tax incentives for part-time work
- In Japan, South Korea, and Indonesia, the gender differences are minimal.
- There are important lessons from these countries for India.

Concerns / Challenges

- Without proper policies, the increase in the working-age population may lead to rising unemployment, fueling economic and social risks.
- India ranks poorly in Asia in terms of private and public human capital spending.
- Health spending has not kept pace with India's economic growth.

- The unmet need for family planning in India at 9.4% as per the latest National Family Health Survey-5 is high as compared to 3.3% in China and 6.6% in South Korea.
- The gender inequality of education is a concern. In India, boys are more likely to be enrolled in secondary and tertiary school than girls.

Way Forward

- Evidence suggests that better health facilitates improved economic production.
- Hence, it is important to draft policies to promote health during the demographic dividend.
- Make reproductive healthcare services accessible on a rights-based approach.
- India needs to increase female workforce participation in the economy.
- For example, a girl who passes Class 10 needs more choices to learn skills that will help her find appropriate work.
- India needs to address the diversity between States. The status and pace of population ageing vary among States.
- A new federal approach to governance reforms for demographic dividend will need to be put in place.
- **Inter-ministerial coordination for strategic planning, investment, monitoring and course correction should be an important feature of this governance arrangement.**

Topic: Indian culture will cover the salient aspects of Art Forms, literature and Architecture from ancient to modern times

2. Protecting India's Cultural Heritage

Introduction

- India has a vast basket of diverse cultural traditions, traditional expressions and intangible cultural heritage.
- Preserving our heritage is enshrined as a Fundamental Duty in our Constitution.
- It is the duty of every citizen to value and preserve the rich heritage of our composite culture.

Threats to Indian Cultural Heritage

- **Theft:** The incidents of thefts have been observed usually from unprotected monuments and ancient temples.
- **Smuggling:** illicit traffic and smuggling in antiquities.
- **Tourism:** Unregulated tourism, tourist activities run by private agents have affected the art heritage places.
- Issues with security of museums: Most of the museums are poorly guarded due to shortage of manpower leading to theft of artefacts, fire accidents etc.
- **Lack of public awareness:** This leads to poor maintenance, vandalism and spoiling the monuments artefacts.
- Duplication: Fake paintings and art forms leading to threat to livelihoods of artists.
- Poor Maintenance: The state of the wall paintings in Ajanta caves is continuously getting worse due to humidity as well as lack of care.
- **Encroachment of monuments:** Over 278 centrally protected monuments have been encroached upon or have illegal occupants, as per government data.

Rationale behind safeguarding the cultural heritage

- History serves as a laboratory and the past serves us to understand the regional laws and social structures. This helps in our progress towards an ideal society.
- The art heritage is the identity and pride of our country.
- It is duty of every citizen to protect, preserve and perpetuate the cultural richness.
- Tourism generates revenue for the state as well as private artists due to the money-multiplier quality.
- Infrastructure development takes place in and around the Heritage areas. Eg. Hampi despite being a small town has excellent infrastructure.

- It creates a feeling of oneness and a sense of attachment by enhancing a sense of belonging to a culture or a region.
- It creates jobs for lot of people from art industry and tourism industry as well
- Every historical site has an important story to tell and these stories have inspired many people to strengthen their commitment to fight injustice and oppression.

Way Forward

- The Archaeological Survey of India (ASI) needs to be more proactive and vigilant in its efforts for Preservation and Conservation of Monuments and Antiques.
- Tapping of the Public —Private Partnership models for sustenance of Arts and Crafts.
- Setting up at least one museum in each district with different chambers for visual and other forms of art and architecture with regional flavour.
- Curriculum modification – Identification and inclusion of heritage as an asset in school.
- Heritage depiction and promotion through immersive technology & augmented reality.
- Greater involvement of universities in schemes promoting arts and culture as well as inclusion of Fine Arts as a subject in universities.
- Recognizing 'cultural heritage tourism' as an upcoming industry by building cultural resources with an adaptation of scientific and technological knowledge.

Conclusion

- Preservation and conservation of India's rich cultural heritage and promotion of all forms of art and culture, both tangible and intangible, is essential and assumes a lot of importance.

Topic: Poverty and developmental issues, Urbanization, their problems and their remedies.

3. Urban Poverty in India

Introduction

- Over the years, due to high migration, the poverty in the country is transiting largely from rural to urban.
- To make rapid economic progress, India needs to improve the well-being of the workforce that migrates to cities in the hope of a better life.

Present Status

- India lifted about 415 million people out of multidimensional poverty between 2005-06 and 2019-21, according to the Multidimensional Poverty Index (MPI).
- Urban poverty dropped from 9% to 5.5%.
- The Atmanirbhar Health Infrastructure Yojana has prioritised strengthening urban health centres and the creation of frontline health teams.

Causes for urban poverty

- High vulnerability
 - Indian cities are vulnerable to multiple disasters like urban floods, urban heat islands, air pollution, inaccessibility of potable water etc.
- Proliferation of slums
 - land to people ratio in cities has been exacerbated.
 - there is lack of hygienic and sanitation in slums
- Development at the cost of poor
 - The peri-urban areas where tribes live are being occupied for establishments of industries without proper compensation and rehabilitation.

Plight of Migrants

- Half of India is expected to urbanise by 2030 and at least half of that population could be migrants.
- Loss of jobs and incomes after the pandemic has driven a large section of the urban poor to move back to their villages.

- Healthcare costs have gone up and the cost of essential commodities has also increased.
- Access to public services is the biggest challenge for migrants.
- The arrival process of migrants to cities in search of work has to be made less traumatic. For this, we need to establish Migration Support Centres.

Implications

- People living in slum areas are also prone to suffer from waterborne diseases such as typhoid and cholera.
- Women and children living in slums are prone to become victims of social evils like prostitution, beggary and child trafficking.
- **Hunger, malnourishment, lack of quality education, high infant mortality, child marriage, child labour** are some of the social problems prevalent for urban poor.
- Urban commons like lake, urban forests, green areas in Cities are adversely affected due to the need for development.

Way Forward

- To make rapid economic progress, India needs to improve the well-being of the workforce that migrates to cities.
- The focus on urban employment generation programmes should be in coordination with local governments.
- **A labour- intensive approach to building municipal infrastructure can be a cost-effective alternative to capital intensive-approach as wage rates are low.**
- Construction of low-cost housing can be carried out using labour-intensive methods, while yielding substantial benefits for urban dwellers.
- There is need for an **urban employment scheme** oriented toward building large-scale medical, health and sanitation infrastructure in cities and towns across India.
- Skilling, upskilling, and re-skilling opportunities must be readily available for poor households in ways that enable them to combine work with skill upgradation.
- Focusing on rural development and to enhance services like education, health, electricity and water and sanitation services are effective means to **control rural to urban migration.**



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General Studies – 2

Topic: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources.

4. Democratising Education

Introduction

- India's path to economic growth is paved with the promise of its young and vibrant population.
- According to CII report, if the country's working-age population is productively employed, India's GDP can grow to \$9 trillion by 2030 and \$40 trillion by 2047.
- **The key to unlocking this potential lies in education technology, or EdTech.**

Capitalising on demographic dividend

- 43 per cent of Indians aged 25 and younger in 2023, and the majority of the population is expected to remain of working age until at least 2100.
- **India has started capitalising on its "demographic dividend" by providing tech-enabled education to its youth.**
- Democratising technology and unleashing its full potential will propel the nation towards its Amrit Kaal goals.

Education Technology

- Digital technology is the foundation of the modern ecosystem.
- Developments in education technology and the use of AI and Augmented reality/virtual reality have led to a marked increase in education technologies available for learners and teachers.
- **Pandemic gave online learning a major boost that has set edtech on the fast track to growth.**
- Technology has proven to be a powerful tool to successfully overcome the urban-rural divide.
- Edtech is democratizing education by expanding access to quality education without the restrictions of geography or time.
- UGC (University Grants Commission) notification of recognising online learning at par with offline will further accelerate the acceptance of LifeLongLearning.
- Learners in Tier 2 and 3 towns can access higher learning in renowned Indian and global educational institutions through edtech platforms.

Access to quality education

- New UNESCO data shows that one out of four children aged five has never had any form of pre-primary education.
- The pandemic further exacerbated challenges to education, widening learning gaps and bringing in a generational learning loss.
- Data shows that children with disabilities, from migrant families, those living in remote areas, from marginalised communities, and girls in particular experience these inequalities most acutely.

Examples of India's capacity for innovation

- Sapan Patralekh of Jharkhand's Dhumartar village, who turned the walls of mud houses in the village into blackboards.
- Shailesh Raval's famous loudspeaker classes in Gujarat's Parpada village, along with several other "mohalla" classes utilising the public announcement systems of Panchayat Bhawan.
- These are examples of India's thirst for knowledge and innovation.

Way Forward

- India's ancient value systems, which have emphasised the importance of education, will play a pivotal role in ushering the nation into the Knowledge Age.
- The transformative power of education can change lives for the better.

- **By nurturing the talents and potential of every child, one can create a society that is truly prosperous, innovative, and compassionate.**

5. Action plan to deploy India's demographic advantage

Introduction

- **Educating our children better, skilling our youth for better-quality jobs, and restoring the female labour force participation rate are the issues central to India's macroeconomic outlook.**
- They affect our ability to achieve potential output without incurring inflationary pressures.

Present Status

- India's 'Phillips curve'—a relationship showing that when the level of unemployment is high, the rate of inflation is lower—seems to have moved up and/or steepened.
- This reflects a lack of adequate skilled labour for the formal sector, which is outperforming the informal sector.
- Due to this mismatch, **India is creating too few jobs relative to the size of its labour force.**

Lack of Skilled Agricultural WorkForce

- There are too many low-skilled labourers, especially in agriculture.
- The substantial subsidization of input factors to this sector keeps it bloated.
- India's agricultural labour force share was at 45% in 2020, way too large given the sector's share in GDP is less than 20%.
- It operates at low efficiency in terms of value addition per worker.
- This keeps the distribution of workers low-skilled and unfavourable for India to grow at full potential.

Education Gaps

- Labour persisting in low-skilled jobs is exacerbated by substantial education gaps for the development of high-skilled labour.
- Some of the recent education gaps are due to extended school closures during covid lockdowns.
- The biggest impact of covid years has been on India's female labour participation.
- Data from the Periodic Labour Force Survey (PLFS) shows that female labour force participation is low in an absolute sense and also relative to most peer countries.

Agri Labour Reforms

- The share of low-earning farm labour needs to be pulled lower and transformed into better-skilled higher-earning labour.
- Raise the sector's presently subsidized costs of inputs to market prices over a period of time.
- Lower the entry rate of agricultural labour by training the youth for vocational skills in manufacturing and services.

Filling Education Gaps

- The large primary education gaps created in children's learning during the pandemic need to be decisively addressed.
- Set up 'charter' or 'magnet' public schools in each state providing top-quality science, technology, engineering and mathematics (STEM) education at secondary schooling levels.
- Such schools will help create an aspirational learning path for many less privileged children.

Increasing Female Labour Force Participation Rate

- The call of the hour is to make it easier for women to join and remain in the labour force, especially in urban areas.
- The following could be made qualifying expenses under Corporate Social Responsibility
 - Support for entities that provide education to the girl child and skilling to the young female population.

- maternity leaves and primary caregiver relief for spouses.
- setting up of quality childcare facilities in company premises or neighbourhoods to reduce the domestic burdens of working women.

Conclusion

- India must devote more attention to our children, youth and women to realize our demographic dividend fully.

6. India's Fight Against Tuberculosis

Introduction

- At the One World TB Summit, the Prime Minister instilled fresh energy to the global tuberculosis (TB) elimination response and reiterated India's commitment to spearhead this effort.

Lessons from the COVID-19 response

- The countries were able to counter COVID-19 by drawing upon the innate human spirit to adapt, learn, experiment, and innovate.
- **The pandemic has shown us that together, we can overcome unprecedented adversity.**
- If we could do it to overcome COVID-19, one can do it to end TB.
- The Mission COVID Suraksha programme to develop vaccines was a good example of a public-private partnership.
- The huge number of diagnostic tests developed and a variety of vaccine platforms show that our manufacturing sector is robust and can scale rapidly.
- Home-based tests for COVID allowed decentralised, rapid and low-cost diagnostics to provide results within minutes.
- New innovations such as nasal and tongue swab-based tests for TB can be a game changer.

India's efforts to end TB

- India's **National TB Elimination Programme** has introduced several measures to find, notify and treat TB cases.
- The case notifications rising from 15.6 lakh in 2014 to over 24 lakh in 2022.
- Engagement with the private sector, launch of social support provisions and introduction of diagnostic tools and new drug regimens, have improved TB management.

Concerns / Challenges

- Lack of widespread awareness about the disease.
- Lack of access to quality care.
- In India, the main risk factor for TB is undernutrition.
- This is why we find **TB incidence higher in lower economic groups, especially in tribal and remote rural areas and in the urban poor.**
- The recent National TB Prevalence Survey (in India) found that 64% of people with infectious TB did not seek care.
- **Bacille Calmette-Guérin (BCG) vaccine for TB does not adequately protect adolescents and adults who are at the highest risk for developing and spreading TB.**

Way Forward

- Need to introduce disruptive approaches and new tools to change the way we prevent, diagnose, and treat TB.
- Strengthen and expand R&D efforts for TB, to develop new tools that will help India meet the End TB targets.
- **While COVID-19 vaccines were developed within a year, we must prioritise and pick up the pace to find an effective TB vaccine.**

- There are currently over 15 TB vaccine candidates in the pipeline; we must ensure that their clinical trials are prioritised.
- **Testing and diagnosing TB needs to become more accessible and affordable.**
- Development and introduction of new therapeutic molecules can play a crucial role in the long run.
- **With its G-20 presidency, India has historical opportunity to build a global health architecture that creates equitable access for all.**

Topic: Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes;

7. India's Water Action

Introduction

- **India announced its "Water Vision" as a part of the prime minister's "Vision India @ 2047" plan.**
- India is leading the G20 Presidency where water is part of the Environment and Climate Sustainability Working Group.

IPCC Synthesis Report

- The 2023 report confirms the adverse impacts of human-caused climate change on water availability.
- It points to the impact of reduced water security on vulnerable regions and populations.
- It calls for
 - sustained and accelerated climate action to improve access to water services,
 - water-use efficiency, and
 - water resource management for the attainment of SDGs.
- **SDG 6 is about clean water and sanitation for all.**

Government Initiatives

- **Jal Jeevan Mission (JJM)** intends to provide a functional tap connection within the premises of every rural household by 2024.
- As of January 31, almost 57 per cent of rural households have tap connections within their premises, as compared to 17 per cent when JJM was launched.
- Central government's model law for regulating groundwater.
- **Namami Gange Programme and Atal Mission for Rejuvenation and Urban Transformation.**
- **National Framework on Safe Reuse of Treated Water.**
- **Per Drop More Crop under the Pradhan Mantri Krishi Sinchayee Yojana**, which aims at the promotion of micro-irrigation systems.
- **Atal Bhujal Mission** which aims to improve groundwater management in water-stressed blocks through community engagement.

Groundwater governance

- India is the largest consumer of groundwater in the world.
- Groundwater governance actions in India can be divided into two components.
- One is targeted at improving decision-making.
- Groundwater atlas, aquifer mapping, regular reporting on annual groundwater extraction and groundwater level trend are examples of this.
- The other action is targeted at groundwater regulation, where more efforts are needed.

Way Forward

- **Ensure access to safely managed domestic water services for all rural households.**
- **Investing** in improving source sustainability and water quality surveillance.
- This will lead to positive social, economic, and public health outcomes through **time savings in water collection and a reduction in medical expenditure on water-borne diseases.**
- **Focus on pollution abatement** and rejuvenating rivers through improving wastewater management.

- Strengthen the **waste water treatment infrastructure** and ensure that freshwater is adequately priced.
- Improve water use efficiency in irrigated agriculture, especially in areas with freshwater scarcity.
- Need to scale up water-saving technologies through targeted subsidies that would enable small and marginal farmers to adopt them.
- **Engage local communities** in water management.

Conclusion

- India is already on its mission to achieve SDG 6 targets through various actions.
- It can leverage its G20 presidency to share the success of such programmes and offer support to other countries in designing water actions.

Topic: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

8. Online dispute resolution (ODR)

Introduction

- NITI Aayog Pushes for Online Dispute Resolution for Speedy Access to Justice.
- The NITI Aayog had released a report on Online Dispute Resolution (ODR) to **advance access to justice and ensure that cases do not end up before higher courts.**
- The report recommends increasing digital infrastructure, building capacity, regulatory framework and including permission for online notarisation, etc.

Present Status

- Government litigation contributes to around 46% of all litigation in the country.
- It not only burdens the courts but also imposes a huge cost on the public exchequer.
- As of September 23, 2020, the government had more than 5 lakh cases pending in different courts across the country.

ODR and its benefits

- ODR is aimed at **resolving disputes outside of the court system through arbitration, mediation, and negotiation.**
- ODR can help reduce the burden on the court and efficiently resolve these categories of cases.
- ODR can help in not just dispute resolution but also in **dispute containment and dispute avoidance.**
- It can use blockchain technology, artificial intelligence and decision support systems to **develop customisable processes that cater to resolving specific classes of disputes.**
- In comparison to traditional resolution through courts, ODR is cost-effective, convenient and quick.
- It can be introduced within Government departments for its internal disputes, as well as through e-Lok Adalats.
- By making dispute resolution accessible, it provides individuals the encouragement to attempt resolution.

Concerns / Challenges

- India still faces a sharp digital divide, in terms of both infrastructure and literature.
- Lack of awareness and trust on the process.
- There is a need for laws related to mediation and data protection.

Way Forward

- Increasing access to digital infrastructure, building capacity through training and strengthening paralegal service.
- **The government can mandate certain categories of disputes to be resolved through ODR before approaching courts.**
- Adopting ODR for government litigation.

- A **good regulatory framework** is essential for the success of ODR.
- Businesses have to be provided benefits to adopt ODR and innovation has to be promoted in the private sector.
- Introduce guidelines or principles that should be adopted in letter and spirit by ODR service providers.

9. Choosing Entrepreneurship as a Career Choice

Introduction

- Many students shy away from pursuing entrepreneurship as a career because of the risk involved.
- But a large chunk of the population is unaware of the rewards and opportunities that can come with it.

Why Support Entrepreneurship

- Entrepreneurship causes **economic growth** by allowing the means of production to be used in newer and more efficient combinations.
- Strong entrepreneurial ecosystem is needed if we want to **achieve \$5-trillion economic target**.
- To **address the unemployment crisis** in the country

International Practice

- The UAE, Netherlands and Finland are the new hotspots for global entrepreneurship.
- Apart from governmental support, entrepreneurship in these countries is inculcated in the education system.
- They view entrepreneurship as a crucial component of their sustainable development strategy.

Government Initiatives

- Indian government has launched numerous initiatives including Skill India, Make in India, Start-Up India, Atal Innovation Mission and Atmanirbhar Bharat.
- NEP 2020 is believed to instil entrepreneurial character among college students.

Reasons for slow pace of Entrepreneurship Spirit

- Lack of understanding and the perceived difficulty of starting a business.
- Entrepreneurial activities are mostly promoted in IIMs, IITs and larger business schools.
- Some institutions find it difficult to support students who have innovative ideas.

Present Ranking

- India has not been able to make it to the top 10 entrepreneurial countries in the Global Entrepreneurship Monitor report (2021) and Innovation Index (2022).
- India ranks lowest in women's entrepreneurship as per the MasterCard Index of Women Entrepreneurs (2021).

Way Forward

- Government must come up with programmes to **encourage entrepreneurship among younger people while they are still in college**.
- Foundational courses in entrepreneurship will help them think outside the box, practice creative approaches, and develop a strong understanding of the business world.
- Colleges too should play a significant role in **increasing the awareness of entrepreneurship as a viable career option**.
- Colleges can open up the **interaction of students with local entrepreneurs**.
- Expand public-private partnerships to allow students to find solutions to complex social, environmental and economic challenges in the country.
- Develop an **"Indian Entrepreneurship Index"** that can measure entrepreneurial activity for all states and union territories.

- It is necessary to celebrate and appreciate the ventures and achievements of budding young entrepreneurs.
- India can look up to the Israeli model, which is consistently ranked one of the most innovative countries in the world for funding technological advancements.
- **The Ministry of Commerce and Industry must analyse the business environment and revisit existing regulations and laws to improve ease of doing business.**

Topic: Role of civil services in a democracy.

10. Humane Policing

Introduction

- There are complaints of human rights violation by police officers.
- Lack of effective legal representation at the police stations is a detriment to detained persons.

Human rights transgressions

- There is a general thinking that, without physical force on misbehaving citizens, the quality of policing cannot improve and law and order cannot be maintained.
- It is believed that the reason for using extreme methods is to extract a quick confession from the suspect.

Concerns / Challenges

- Deaths in police custody are a matter of grave concern.
- National Crime Records Bureau (NCRB) data reveal that on average about 100 custodial deaths have taken place every year between 2010 and 2019.
- Across the globe a large number of cases of torture have gone unreported.
- Only about 10% of complaints are believed to have been registered.
- Only a small percentage of the offenders have been convicted.

Police excesses in other Countries

- U.S. had far too many instances of police torture.
- In contrast, police handling of the public is more civilised in most of Europe, including the U.K.

Various Recommendations

- The National Police Commission, the Law Commission, the Malimath Committee Report and the Supreme Court in Prakash Singh v. Union of India have recommended that the investigating police should be separated from the law-and-order police to ensure better expertise in investigation.
- It was suggested that the separation start in towns which have more than 10 lakh population.
- Malimath Committee recommended that an investigating officer should preferably investigate no more than 10 cases every year.
- The Supreme Court in D.K. Basu v. State of West Bengal (1996) case, laid down guidelines to check custodial torture and increase transparency

Positive Developments

- The Tamil Nadu Special Police (TSP) has established dedicated silent spaces called 'Zen zones' and 'Zen dens' for police personnel to spend time meditating to get over stressful circumstances.
- In order to check the violation of human rights, CCTV cameras have been installed in police stations.
- The Home Ministry has linked the 'police modernisation scheme' with police reforms.

Way Forward

- The foremost measure to reduce instances of custodial violence is to reduce the number of arrests.
- The Supreme Court held that each arrest must be necessary and justified; having the authority to arrest is alone not sufficient.

- No illegal physical treatment of crime suspects must be tolerated and that such behaviour must be subjected to credible enquiry by an independent authority.
- Proving solid training in ethics at the time of induction to everyone from an IPS officer to a constable at the grassroots.
- DGPs and IGPs have a crucial role in indoctrinating young recruits on the value of sticking to the law and civilised behaviour.
- It is necessary to increase the investigating officers in proportion to the number of serious offences.
- With the increase of white-collar crime and cybercrime, subject experts are needed to assist the police in the investigation.
- Police officers need to be sensitised regularly and encouraged to employ scientific tools of investigation like the lie detection test, narco test and brainfingerprinting test.



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INSIGHTSIAS

SIMPLIFYING IAS EXAM PREPARATION

General Studies - 3

Topic: Government Budgeting.

11. Investment-led Growth

Introduction

- Public investment-led economic growth forms a credible strand of explanation for India's post-Independence economic growth.
- India's long-term growth prospects are embedded in public capital expenditure programmes.
- Thus, there is a need to analyse trends in government's investment policies and their impacts.

Investment-led growth

- Investment-led growth relies on investment to create new capacity.
- This creates more employment and hence higher demand, while simultaneously, increasing production capacity.
- In investment-led growth, supply rises in tandem with higher demand, this leads to increased growth.

Background

- India's post-Independence economic growth was led by the public investment.
- During Asian financial crisis of 1997, the then government initiated public road building projects.
- These projects led to an investment and export-led boom in the 2000s.
- In 2010s, real Gross Fixed Capital Formation (GFCF) rate declined, which saw a rise in 2019-20.
- **Between 2014-15 and 2019-20, the shares of agriculture and industry in fixed capital formation/GDP fell, whereas the share of services rose.**

Present issues in the investment-led economic growth strategy

- The budgetary definition of investment refers to financial investments. It includes purchase of existing financial assets, or loans offered to States.
- The **National Accounts Statistics** suggests that over 90% of Gross Capital Formation (GCF) consists of fixed investments. However, the productive potential of investment depends on its composition.
- Although investment in roads and communications rose, it declined in industries and agriculture.
- There is a need for balance between "**directly productive investments**" (in farms and factories) and infrastructure investments.
- Although **time and resources were dedicated to improve ease of doing business under 'Make in India' campaign**, it didn't result in a boost to industrial investment.

Concerns / Challenges

- India has become an import-dependent economy, especially on China.
- Despite the clarion call for Atmanirbhar Bharat, India's imports have shot up.
- The number of such projects that have taken off under production linked incentive scheme (PLI), their investment and employment generation is sparse.
- If a substantial share of public investment "leaks" out as imports, then the industrial output may not get the desired boost.

Way Forward

- It is important to translate the power of huge capex into sustained and balanced development at a macro level.
- The government's agenda on ease of doing business (EoDB) requires continual investments in judicial reforms and its infrastructure.
- DIPAM should develop and publish an index or measure of benefits accruing from these disinvestments — impact on financial performance, jobs, efficiency and technology upgrades.

- This will help create better consensus with all stakeholders and give DIPAM greater confidence to accelerate targets.
- The public sector enterprises, including 100 maharatnas, navratnas and miniratnas, offer tremendous scale and learning opportunities.
- This platform, combined with the skills of Indian entrepreneurs and professional leaders, can make India become globally competitive.

Topic: Land reforms in India

12. Land Leasing

Introduction

- Land leasing is a **commercial agreement** in which the user or lessee acquires the right to use the land in lieu of certain amount of payment.
- Land leasing activity is very less in India or if exists it is unregulated. Therefore, there is a **need for reform in land leasing**.

Present Landholdings

- Smallholders now cultivate around 40 per cent of operated land and constitute around 80 per cent of total landholdings.
- The shrinking size of farms is a major factor responsible for low incomes and farmers' distress.
- The viability of marginal and small farmers is a major challenge for Indian agriculture.
- Across the country, over 20 per cent of land holdings are farmed by tenant farmers who cannot access facilities like credit and other support services.
- Some States allow leasing with few terms and conditions.

Need for Land Leasing

- The miniscule returns farmers get from fragmented landholdings prevents mechanization and investments in agriculture and its profitability.
- In the fear of losing land and in the absence of long-term tenancy laws the agriculture land lease are limited to one year.
- The tenant is not sure of regaining tenancy next year. Therefore, there is no incentive for capital investment in agriculture.
- Changes in the occupational structure in rural areas and increasing cases of fallow land.
- The presence of informal tenancy puts tenants at the risk of exploitation because of no legal security and high rents.
- Consolidation of land holdings to gain the benefits of size, can help in reducing agrarian distress.

Benefits

- Benefits in the form of **enhanced investments, economies of scale in use of capital, machines and other inputs**.
- Enhanced social mobility as non-farmland owning groups can benefit by taking land on lease can generate more income.
- Those with small landholding can lease out their lands and migrate to other occupations and therefore will reduce the burden on agriculture land.
- Help corporate farming under which corporates can take large chunks of land on lease and do cultivation.

Concerns / Challenges

- It will prevent redistribution of land through transfer ownership as people living outside the area will prefer leasing instead of selling.
- Land leasing will **promote absentee landlords**.
- It may lead to a situation where individuals with big pockets will control agriculture by taking large chunks of land on lease.

Way Forward

- Modernization and digitization of land records will reduce litigation related to the land leasing and land pooling.
- The standardization of lease agreements and dispute resolution mechanisms should be developed.
- Modernization of the agriculture marketing so that informed decisions regarding leasing and pooling can be made
- Enhancing credit and insurance facilities for agriculture.
- **Transformation of agriculture as a business – cum – livelihood activity** so that investments are planned based on long term strategies and hedged from market and environmental risks.
- Proper awareness and education among the rural folk about the benefits that land leasing can bring to their household income and life.
- States have to come forward to adopt the Model (Agricultural) Land Leasing Act proposed by NITI Aayog
- This Act would allow for the profitable use of fallow land and provide tenant farmers with access to credit and insurance services.

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

13. Solar photovoltaics (PV)

Introduction

- Solar photovoltaics (PV) has driven India's push towards the adoption of cleaner energy generation technologies.
- From less than 10 MW in 2010, **India has added significant PV capacity over the past decade**, achieving over 50 GW by 2022.

India's Target

- By 2030, India is targeting about 500 GW of renewable energy deployment, out of which ~280 GW is expected from solar PV.
- This necessitates the deployment of nearly 30 GW of solar capacity every year until 2030.

India's current solar module manufacturing capacity

- India's current solar module manufacturing capacity is limited to ~15 GW per year.
- The demand-supply gap widens as we move up the value chain.
- **India remains dependent on import of solar modules for field deployment.**

Raw materials supply

- There is a huge gap on the raw material supply chain side.
- India will have to work on technology tie-ups to make the right grade of silicon for solar cell manufacturing.
- Since >90% of the world's solar wafer manufacturing currently happens in China, it is not clear how and where India will get the technology.
- India is more of an assembly hub than a manufacturing one.
- In the long term, it would be beneficial to move up the value chain by making components.

Concerns / Challenges

- Over-reliance on Chinese imports for upstream components of PV modules such as polysilicon and ingots/wafers.
- **Land, the most expensive part of solar projects, is scarce in India.**
- Establishing state-of-the-art manufacturing facilities for cells, modules, and raw material needs access to technology.
- It is unlikely that companies that have spent millions of dollars on in-house and external R&D would make it easy for India to access the latest technologies at a lower cost.

Way Forward

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- Indian industry needs to move towards newer and superior technologies as part of expansion plans.
- India's path to become a manufacturing hub for solar PV modules requires putting some tax barriers and commercial incentives.
- India needs strong industry-academia collaboration in an innovative manner to start developing home-grown technologies.
- Policy stability is necessary to sustain investor confidence in the market,
- The government must augment the PLI scheme to also include more upstream components, PV equipment machinery and ancillary components for more holistic development of the PV manufacturing ecosystem.
- India must aim to build enough PV capacity to satisfy local demand and maintain a healthy global presence.

Topic: Conservation, environmental pollution and degradation

14. Impact of Climate Change on Vulnerable Communities

Introduction

- According to IPCC Sixth Assessment Report, anthropogenic climate change has caused widespread and rapid changes in the atmosphere, ocean, cryosphere, and biosphere.
- **The report stresses how vulnerable communities that have historically contributed the least to current climate change are disproportionately affected.**
- The AR6 synthesis report stresses on the disproportionate impacts on the most vulnerable communities, particularly in Africa, Asia, and Central and South America.

Vulnerable communities in India

- In India the most climate vulnerable communities are Dalits, Adivasis, backward castes groups, nomadic and pastoral communities, traditional and small-scale fishers and small and marginal farmers and urban poor.

Climate Change in India

- Indian monsoon and rainfall patterns are changing significantly due to climate change.
- Agriculture sector, where 70 per cent of all farmers from the Scheduled Castes work as agricultural labourers dependent on daily or seasonal wages, gets hit first.
- Floods, heat waves, sea levels rise and extreme weather events are increasing.
- **Past experience demonstrate how caste oppressed communities are not only disproportionately affected by them but get discriminated during rehabilitation, and recovery from climate onslaughts.**
- During last year Assam floods, the sanitation workers had to work day and night to unclog drains and wash off the sludge in the city.
- According to the Safai Karmachari Andolan, approximately 98 per cent of all workers employed in this kind of work are Dalits and predominantly women.
- Marathwada region of Maharashtra bear the brunt of caste-based oppression, inequalities, and discrimination with recurring droughts in the region for decades.
- In the Indian Sundarbans the health of the Adivasi community is being impacted by the increasing saltwater content as a result of sea level rise.

Concerns / Challenges

- Dalit and Adivasi communities have fewer adaptation resources to combat the damage from events related to climate change.
- They continue to be deprived of socio-economic and political rights and face systemic discrimination.
- Though India has a **National Climate Action Policy** and all states have state climate action policies, the vulnerabilities of the caste-oppressed communities aren't part of most of these action plans.

India's Role

- In the recently concluded COP 27 in Egypt, India spoke about international climate justice and the loss and damage funds that developed countries have to contribute to UNFCCC.

Way Forward

- The climate action plans need to acknowledge and address caste and climate vulnerability.
- Special protection measures need to be in place during climate event preparedness.
- Along with class, gender, and race, caste needs to be acknowledged as a category by the UNFCCC.
- **India should recognise climate vulnerabilities of caste-oppressed communities and initiate measures to protect them.**
- These efforts should be part of the national and state climate action policies.
- They should also be integrated into disaster and climate risk management plans, climate impact relief assistance programmes, and social protection coverage.
- **There should be separate climate action plans and implementation funds for caste oppressed communities.**
- The climate justice movement in India, mostly led by the urban upper caste must integrate caste justice questions into their campaigns.

15. Rising Sea Levels

Introduction

- The World Meteorological Organization (WMO) has found in a new report that the **world's sea level is rising at an unprecedented rate.**
- It is having **disastrous consequences for the weather, agriculture, the groundwater crisis, and social disparities.**

Present Climate Crisis

- Consistent rise in global temperatures
- Record-breaking increases in the concentration of greenhouse gases
- Sustained drought-like conditions in East Africa
- Record rainfall in Pakistan
- Unprecedented heatwaves that struck Europe and China in 2022.
- Antarctic sea ice fell to its lowest extent on record.

Sea Level Rise

- Sea-level rise is one of several compounding disasters.
- While the rate of sea-level rise was 2.27 mm/year in 1993-2002, it shot up to 4.62 mm/year in 2013-2022.
- The earth's ice cover, known as the cryosphere, has thinned.

Factors responsible for sea-level rise

- **Ocean warming, ice loss from glaciers and ice sheets, and changes in land water storage.**
- As the ocean heats up, it undergoes thermal expansion, which in turn leads to a rise in Sea level.
- Ocean heat content (OHC) measures in 2022 touched a new record.

Consequences

- Rising seas swallow more of the land cover, particularly in coastal areas.
- Coastal communities will face an acute shortage of land for human use.
- This will lead to an **increase in social disparities between people living in coastal areas.**
- With a rise in ocean temperatures, the **chances of cyclones could increase**, affecting coastal communities.
- South Africa was affected by five cyclones in over two months in 2022, leading to the displacement of hundreds of thousands of people.

- More seawater could seep into the ground, leading to the **groundwater turning more and more saline**.
- This can exacerbate water crises in coastal areas as well as agriculture in adjacent regions.
- In the Sunderbans delta in West Bengal, sediment from coastal areas has left more islands submerged under water, and this has forced local communities to migrate.
- This will further **endanger the socio-economic stability** of these communities.

Way Forward

- It is crucial that reports like the WMO's 'State of the Global Climate 2022' continue to generate and accumulate data on climate change.
- Need for global and local policy-level changes related to climate change.

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

16. AI and the future of employment

Introduction

- When ChatGPT first came out, it sparked much discussion surrounding AI eventually replacing everyone's jobs.
- Now with GPT-4 out, it would make people more insecure about their jobs.

GPT-4

- The latest AI model GPT-4 exhibits "human-level performance" on various professional and academic benchmarks.
- It could automate tasks like writing code, testing, debugging, drafting emails and notes.
- Almost any job which doesn't require physical presence, could be automated and done through generative AI.

Impact of Automation

- A recent report by Goldman Sachs estimates that as many as 300 million full-time jobs around the world could be automated in some way by the newest wave of AI.
- This has troubling implications for India.
- Sixty-five per cent of the population is below the age of 35 and India is already struggling with unemployment.
- Offshored jobs like entry-level programming, customer service, documentation, and more are now in danger of being lost due to automation.
- Past experience tells us that individuals who become unemployed due to automation aren't necessarily absorbed into other more productive jobs.
- This is due to lack of enough higher-order jobs.

Will AI eliminate entire jobs?

- Rarely does technology eliminate entire jobs.
- In practice, technologies only automate tasks and reduce the labour involved in a job.
- With a tractor, the farmer can now plough 10 times the area when he was doing it manually.
- Generative AI tools will introduce a similar rate of productivity increase in knowledge work.
- Such productivity improvement and resulting profit often brings greater employment.
- Between 2008 and 2018, across 11 jobs considered at risk from AI, employment rates, on average, went up by 13%.
- New technologies also create entirely new job categories.

Way Forward

- Regulators and society need to be involved to guard against the potential negative consequences of AI.

- **Expand the discussion beyond innovation and productivity to larger questions of the impact of AI on employment and the role of government and industry in mitigating its effects.**
- This includes
 - rearchitecting how we educate and skill our youth population,
 - building supportive infrastructure,
 - protecting workers' rights, and
 - expanding the kind and nature of work we value.
- There is already heated debate on the future of artificial intelligence in the developed world. India must make its voice heard.

17. India as an R&D Driven Economy

Introduction

- For India to be a research and development-driven economy, universities play an indispensable role.

Building Research Infrastructure

- **Innovation requires building institutional frameworks and research infrastructure.**
- We should start by connecting institutions nearby.
- Building research infrastructure should be envisioned for an ecosystem rather than an institution.
- **The initial funding to build large research infrastructures needs to come from the public exchequer.**
- Government funding is the initiator of turning ideas into workable solutions in science and technology-led innovation.
- The start-up companies need to be financed by private investors, like angel investors and venture capitalists.

India's R&D expenditure

- India's R&D expenditure-GDP ratio of 0.7% is very low when compared to major economies and is much below the world average of 1.8%.
- The main reason is the low investment in R&D by the corporate sector.
- While the corporate sector accounts for about two-thirds of gross domestic expenditure on R&D (GERD) in leading economies, its share in India is just 37%.

Education and learning

- Education is extrinsic, passive and curriculum-led.
- Learning is intrinsic, active and curiosity-led.
- **A well-defined curriculum paves the way for greater learning outcome.**
- When the two facets of education and learning work together, it can lead to solving some of the world's greatest problems.

Innovation and entrepreneurship

- Need to establish the right ecosystem to nudge students towards innovation and entrepreneurship, which traditional engineering education has failed to do.
- We need an ecosystem where students can engage with corporates, start-ups, industry experts, partners, investors, accelerators, etc.

Way Forward

- The university curricula need to get away from focusing exclusively on awarding degrees to providing vocational training towards developing students' skills.
- Focusing on innovation must not take our minds away from problems in fundamental sciences or other streams.
- Funding for applied sciences should not be at the cost of fundamental sciences.
- The market caps of many technology-driven companies rank in the top 20 of global GDP alongside the nation-states.

- **Universities can play a significant role in fostering the economies of all nations.**
- Need for Sustained public funding to build world-class research and development infrastructure and hiring the best faculty in our university system.

Topic: Disaster and disaster management.

18. Dam Safety in India

Introduction

- The mismanagement of dams has led to disastrous floods.
- Understanding their role in floods would pave the way for enhancing our readiness.
- A parliamentary panel has expressed concerns over the safety of aging dams in the country.

Present Status

- Dams are one of the vital elements for the growth of the country's economy.
- **In India dams have played an important role in fostering rapid and sustained agricultural and rural growth.**
- Substantial investment has been done in building dams and related infrastructure.
- **India is ranked third in the world** in terms of building large dams.
- About 1,100 large dams have already reached 50 years of age and some are older than 120 years.
- The number of such dams will increase.
- 80% of the nation's large dams face the prospect of becoming obsolete as they will be 50 years to over 150 years old.
- We have noticed the mismanagement of dams has led to disastrous floods.
- The Centre legislated the Dam Safety Act in 2021 to provide for surveillance, inspection, O&M of a specified dam.

Consequences of ageing of dams

- As dams age, **soil replaces the water in the reservoirs**. Therefore, the storage capacity reduces.
- Studies show that the design of many of our reservoirs is flawed.
- Study shows that India's iconic Bhakra dam is 139.86% higher than originally assumed.
- Similarly, the actual siltation rate observed for the Hirakud, Maithan and Ghod dams are way higher
- Therefore, the storage space in Indian reservoirs is receding at a faster rate.
- Reservoirs are poised to become extinct in less than a few decades with untold consequences already under way.
- The **lack of communication between dam operators** among states has always been a longstanding issue when it comes to flood mitigation.

Concerns / Challenges

- Dam safety has always been an issue in the country which in the past reported as many as 36 dam disasters.
- There is no mechanism to assess the viable lifespan and performance of dams
- Some of the dams in India are over 300 years old, but they have not been decommissioned.

Way Forward

- Jal Shakti ministry must take suitable measures for evolving a "viable mechanism to assess the lives and operations of the dams"
- Since the dam safety is dependent on many external factors, the environmental angle in this, needs to be taken.
- There is a need to strengthen the state irrigation department and the Central Water Commission.
- It should be ensured that the inspection of dams is done by the respective state governments.
- State governments should follow the dam safety manual with precision.

- Especially, where human settlements are scattered all around, the building of dams has to be regulated as per the guidelines.
- **Creation of buffer zone** has to be done to protect land near dams from encroachment.
- **Dam safety and proper village, town and city planning have to be integrated.**
- Hence, ensuring “dam safety” should be a continuous exercise.



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