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Shankar IAS Academy™

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DECEMBER 2019

G.S PAPER I

1. HISTORY

The outcomes of Mughal administration enrich the diversity of the country in various ways. Discuss

KEY POINTS

Land revenue system

The land revenue system introduced by Akbar exists even today of course, with a few changes. Several rules and regulations adopted by modern administrators derive their origin to the Mughals.

Handicrafts

- The Mughal rulers established royal 'Karkhanas' and made a notable contribution to the development of handicrafts.
- On account of industrial development the balance of trade remained in favour of India.

Architecture

- Though all the Great Mughals built memorable monuments like Sher Shah's Purana Quila, Humayun's Tomb, Shah Jahan was a class apart going on a classy construction streak building such marvels as the Taj Mahal, the Red Fort and several mosques.

Paintings

- Generally made as miniatures either as book illustrations or as single works, Mughal painting evolved from the Persian school of miniature painting with Hindu, Buddhist and Jain influences.
- The paintings often revolved around themes like battles, legendary stories, hunting scenes, wildlife, royal life, mythology, etc. These paintings also became an important medium to narrate the tall tales of the Mughal emperors.

GS PAPER II

2. HEALTH

Will a separate medical devices authority give a new energy to the medical devices sector in the country? Comment

KEY POINTS

- A separate agency to regulate medical devices will be unique to India and may pose its own challenges.
- While we have policy mechanisms and regulatory practices to compare India's domestic produce, the true testament of quality can only be attributed to adoption and implementation of international harmonised standards rather than coming up with a new mechanism altogether.
- Another problem is the human resource crunch at multiple levels—a shortage of inspectors to carry out quality assessments, crippling state of manufacturing units and poor regulatory environment are major challenges.
- A Deloitte report had noted that "India has not been able to develop itself as a strong manufacturing base for medical technology.
- The industry remains dependent on imports for meeting its domestic requirements."
- For the government to realise the need of wider accessibility of healthcare services, one needs to create a holistic environment that supports the establishment of a new regulatory regime.

- With its primary objective of ensuring safety, quality and efficacy of medical devices, MDA would be able to focus on globally harmonising the standards of domestic as well as imported devices only with universally-accepted and harmonised norms like in the rest of the world.
- In what looks like a mutual (the government and the industry) inclination as per ongoing negotiations between the two countries (US-India trade deal) towards trade margin rationalisation (TMR), it could be the next scientific step to solving the crisis around price capping in the medical devices industry.
- If calculated the right way, TMR could be the hope the healthcare industry in India needs. However, it would be incorrect to jump to any conclusion regarding the success or failure of the new MDA before it is even formulated.

With 2.3 million children not vaccinated against measles last year, India has much must do more to increase public awareness of vaccine importance. Analyse

KEY POINTS

- Even as reported **measles cases globally** during 2000 to 2018 decreased by 59%, there has been a spike since 2016.
- Last year, the Democratic Republic of the Congo, Liberia, Madagascar, Somalia, and Ukraine accounted for 45% of all reported cases.
- Employing digital solutions and technology for data collection and management may aid in streamlining vaccination activities and provide vital knowledge to promote tailored immunisation programs.
- In recent times, awareness campaigns like, Swasth Immunised India has succeeded in advocating the importance of vaccine administration via a multimedia approach.
- The Indian vaccine manufacturing industry has brought down the cost of vaccines, making it affordable for Indians, as well as the global population.
- They have made great technological advancement in vaccine production, meeting the WHO standards. As a result of this, India holds a dominant position in the global vaccine market.

The future goal should be to achieve full immunisation coverage. Implementing a four step S.E.G.A approach:

- (S)reamlining of the regulatory process for various approvals; (E)xploiting technology advancement ;
- (G)athering support from the government to spread awareness and to increase financial support for routine immunisation;
- (A)sserting increased funding by the government in R&D infrastructure. This will help in collectively fulfilling our magnificent dream of full immunisation.

3. GOVERNMENT POLICIES

Although Transparency International's Global Corruption Perception Index showed that India has improved, corruption persists despite the passage of the Prevention of Corruption Act 1988. Analyse

KEY POINTS

- The results of the 2019 India Corruption Survey conducted by Transparency International point to a five percentage point drop in corruption levels.
- The striking point about the more granular findings of the survey is that the bulk of the corruption is at local levels.
- Thus, even if we assume that government is able to make the central government corruption-free, the malaise will persist at the lower levels of the country's governance structure — at state and local government levels.



- This has critical implications for India's future as an investment destination, since local administrations are, so to speak, the business end of the ease of doing business environment.
- The survey also contradicts the common notion that posits technology interface as the optimum bulwark against corruption, especially in citizen-facing services.
- Some 44 per cent of respondents said they paid a bribe in an office that had computerisation, and 16 per cent said that they paid a bribe despite the office having a functional CCTV system.
- That Telangana, one of the first states to introduce a citizens' portal for a slew of common goods and services, figures as India's fifth-most corrupt state tells its own story.
- Corruption persists in India despite the passage of the Prevention of Corruption Act, which deems a bribe an offence attracting seven years' imprisonment or a fine or both.
- This situation points to the inherently weak institutional foundations of governance in India, which creates a vicious circle of venality.
- The absence of robust systems to punish bribe givers enables them to enhance their powers by becoming centres of routine approvals and clearances.
- They may offer investors a degree of certainty in place of the tortuous uncertainties of dealing with wilfully inefficient local officials but it involves an unhealthy element of discrimination and arbitrariness in governance, which are embedded with risks for investors.

To avoid yet another crisis in Non-Performing Assets, key flaws in Pradhan Mantri MUDRA Yojana need to be fixed properly. Discuss

KEY POINTS

- Under the scheme, MUDRA (Micro Units Development and Refinance Agency) was set up to provide refinance support to last mile financiers such as banks, MFIs and NBFCs for lending to small entrepreneurs having loan requirement up to Rs 10 lakh.
- Between FY16 and FY19, loans disbursed under the scheme have grown by over 30 per cent annually. While the massive drive by the government was intended to address the funding need of small businesses, the unbridled growth has impacted the quality of loans, warranting a closer scrutiny.
- According to the queries raised in the parliament about 2% of the loans sanctioned have turned bad since the inception of the scheme.
- The top banks constituted nearly half of the total bad loans reported under MUDRA scheme and increasing frauds reported in the banks due to misuse of funds.
- RBI indicating the potential risk and streamlining the appraisal process is not enough, it will have to assess the syste-wide implications in a comprehensive manner.

Fixing the flaws

- Rationalizing the targets under the scheme so that loans are distributed as per the rules and regulations.
- Effective monitoring and appraisal systems is the need of the hour.
- Focus more on targeted lending based on the genuine profiles rather than on focusing on the achievements.



Is the new Seeds Bill tilted against farmers' interests and biased in favour of seed companies? Analyse

KEY POINTS

- According to the government, a new Seeds Bill is necessary to enhance seed replacement rates in Indian agriculture, specify standards for registration of seed varieties and enforce registration from seed producers to seed retailers.
- While these goals are indeed worthy, any such legislation is expected to be in alignment with the spirit of the PPVFR Act.
- For instance, a shift from farm-saved seeds to certified seeds, which would raise seed replacement rates, is desirable. Certified seeds have higher and more stable yields than farm-saved seeds.

Problematic provisions

- The Seeds Bill insists on compulsory registration of seeds. However, the PPVFR Act was based on voluntary registration.
- Seeds Bill, demands no such information while registering a new variety. As a result, an important method of recording the contributions of farmers is overlooked and private companies are left free to claim a derived variety as their own.
- The Seeds Bill is not based on an IPR like breeder's rights, private seed companies can re-register their seeds an infinite number of times after the validity period. Given this "ever-greening" provision, many seed varieties may never enter the open domain for free use.
- The disputes on compensation have to be decided as per the Consumer Protection Act 1986. Consumer courts are hardly ideal and friendly institutions that farmers can approach.
- According to the Seeds Bill, farmers become eligible for compensation if a plant variety fails to give expected results under "given conditions".
- "Given conditions" is almost impossible to define in agriculture. Seed companies would always claim that "given conditions" were not ensured, which will be difficult to be disputed with evidence in a consumer court.

The way ahead

- The private sector, thus, has a natural incentive to focus on hybrids. In such a world of hybrids, even progressive seed laws become a weak defence.
- Strong public agricultural research systems ensure that the choices between hybrids, varieties and farm-saved seeds remain open, and are not based on private profit concerns.

Despite its transformative potential, the mid-day meal scheme is perceived as charity, not a civic responsibility. Comment

KEY POINTS

The latest criticism in mid-day meals scheme is milk. Government norms entitle every child to receive 150 ml of milk as part of the mid-day meal. However, recent events shows how one litre of milk was mixed in a bucketful of water so that it would suffice for the more than 80 children present that day in a school in rural Uttar Pradesh (U.P.).

Making it part of curriculum

- Ever since it was made compulsory under a Supreme Court order, the mid-day meal scheme has received considerable appreciation.
- There are cases of bad food, leading to food poisoning, about cheating, caste bias and discrimination.



- Food is central to the caste system, so it is not surprising that in many schools, children are made to sit separately according to their caste status. Several parents ask their children to carry their own food as the school cook belongs to a lower caste.
- The mid-day meal is a chore, to be carried out under difficult circumstances and constraints. The cook is miserably paid; the food items that qualify for selection are the cheapest available; and post-meal cleaning arouses no Gandhian memories in anyone's mind.
- With the growing shift of the better-off parents to private schools, government schools are viewed as places for the poor.
- Therefore, the mid-day meal is associated — both in public perception and state policies — with poverty. Like other schemes that serve the poor, this scheme is also covered by norms that insist on the cheapest.
- Children receiving a litre of milk mixed in a bucketful of water will surely understand the concept of cheating better than that of fair play.

The Recycling of Ships Bill, 2019, has been brought into force to set global standards for safe and environment-friendly recycling process, also provides for adequate safe working conditions for workers. Discuss

KEY POINTS

- **The Recycling of Ships Bill 2019** for Safe and Environmentally Sound Recycling of Ships in India is a giant step and historical moment in the Indian Maritime arena and will have far reaching effects in Indian Ship Recycling industry.
- The existing Shipbreaking Code (revised), 2013 and the provisions of the Hong Kong Convention, 2009 are dovetailed in this Bill.
- **The Bill, upon becoming Act**, will ensure environment friendly recycling process of Ships and adequate safety of the yard workers.
- With the enactment of this bill, India will set global standards for safe and sound environmentally-friendly recycling of Ships, as well as ensure adequate safety of the yard workers.
- This bill will pave the way for more global ships to enter into Indian Shipyards for recycling and boost employment and business opportunities also.

Salient features of the bill

- The bill will harbinge significant increased number of global ships entering into Indian Shipyards for Recycling.
- Recycling of Ships will boost business & employment opportunities and strengthen India's position in the recycling industry.
- It will raise the brand value of our Ships Recycling Yards located at Alang in Gujarat, Mumbai Port, Kolkata Port & Azhikkal in Kerala.
- 10% of country's Secondary steel needs, as an outcome of Recycling of Ships, will be met in an eco-friendly manner.
- Ships Recycling facilities will become compliant to International standards and Ships will be recycled only in such authorised facilities.
- The tremendous growth of business activities will contribute to the country's GDP.



The Personal Data Protection (PDP) Bill, 2019, has significant parallels and differences to the European Union's General Data Protection Regulation (GDPR). Discuss

KEY POINTS

Personal Data Protection (PDP) Bill, 2019,

Where they differ

Data transfer abroad:

- One significant difference between the GDPR and the PDP Bill is the framework built around deciding whether or not data can leave the country.
- Both give a government authority the power to decide if data transfers can occur, but the GDPR more clearly lays out the parameters of this decision.
- The PDP simply states that the Authority has to have approval of the transfer of any sensitive personal data abroad, without specifying as many details about the other country's "adequacy" in receiving the data.

Automated decisions:

- The GDPR much more directly addresses personal harm from automated decision-making. The PDP Bill requires an assessment in cases of large-scale profiling, but does not give the citizen the right to object to profiling, except in the cases of children.

Personal data types:

- To give special attention to particularly important types of data, India's PDP Bill categorises personal data much more explicitly.
- In the Indian Bill, a sub-category of personal data called sensitive personal data has a pre-determined list including health, financial, caste, and biometric data. It resembles the list of "special categories" in the GDPR, but the GDPR does not have separate localisation rules for this type of data.

Supervision & data handling:

- The GDPR Bill also gives wide-ranging discretion to "supervisory authorities" created in each of the 'US's member states to oversee this topic. Aspects of the Bill, such as penalties, are left up to these authorities.

Where they are alike

Consent:

- The PDP Bill and the GDPR are founded upon the concept of consent. They also both given special protection to children's lack of ability to give consent.

Individual's rights:

- Both have similar rights given to the individual, including the right to correction, the right to data portability (transferring your data to another entity), and the right to be forgotten (the right to erase the disclosure of your data).

Other similarities: Both place responsibility on the fiduciaries, such as building products that include privacy by their design and transparency about their data-related matters.



The Ujjwala scheme has the potential to be transformative, but only if effective monitoring prevents it from rampant leakage. Comment

KEY POINTS

- The audit of the Pradhan Mantri Ujjwala Yojana (PMUY) by the Comptroller and Auditor General of India highlights problems that the government will do well to pay heed to and address.
- Sustained LPG use, one of the key goals of the PMUY, also seems to be out of grasp at present with the annual average of refill consumption for nearly two crore PMUY consumers.
- Diversion of domestic cylinders for commercial use that plagued the earlier LPG subsidy regime in the country was noticed for nearly two lakh PMUY beneficiaries.
- The audit also pointed out instances of bank account of others being linked to Ujjwala scheme beneficiaries, which means the subsidy transferred may be getting waylaid—“during test check of KYC records at sample 164 LPG distributors, 100 instances were noticed where bank account of others were linked with PMUY beneficiaries”, the report noted.
- The audit findings make a strong case for not just Aadhaar linking of all family members of existing as well as new beneficiaries to ensure rigorous de-duplication but also for spot checks to see if intended beneficiaries are diverting LPG to unintended beneficiaries or for commercial purposes.

Measures needed

- Apart from rejigging the software at oil-marketing companies to add the appropriate input controls and data validation, e-KYC needs to be initiated too.
- A special focus also needs to be given to low consumption households, especially to address the underlying factors.
- The scheme had called for third-party audits to ensure that leakages are eliminated; the government must try and formalise this at the earliest.

The attempt to converge KUSUM scheme with ongoing other schemes present a great opportunity, but the guidelines are not well designed to achieve this convergence. Analyse

KEY POINTS

- The recently announced KUSUM (Kisan Urja Suraksha evam Utthaan Mahabhiyan) scheme by the Ministry of New and Renewable Energy (MNRE) attempts to address some of these issues related to power supply for agriculture.
- KUSUM is presented as a solarisation scheme aimed at benefiting farmers. The scheme has three components.
- Component A promotes distributed solar energy generation with a solar plant capacity of 500 kW to 2 MW. As per MNRE guidelines, the solar plant requires a dedicated evacuation infrastructure (feeder).
- A competitive bidding process for tariff determination, with a ceiling tariff as per latest solar energy tariff order of the respective States, is being proposed.
- The proposed competitive bidding process for tariff determination proposed is unlikely to attract any bidders, as the capital cost of smaller renewable generators is typically higher than the capital cost of larger systems. It is financially not feasible for the generators.
- The requirement for a dedicated feeder for evacuation of electricity generated by the DREG results in unnecessary infrastructure costs and occupies valuable discom substation bays.
- One key advantage of distributed solar energy generation is the fact that production and consumption of electricity occur at the same location, or in close vicinity to each other, thereby reducing T&D losses and optimising the utilisation of existing electrical distribution infrastructure.



Grid-connected power

- Component C of KUSUM promotes grid-connected solar for agricultural service connections (behind-the-meter).
- A domestic content requirement for the solar system components is mandatory. The priority is set on small and marginal farmers. The guidelines also give priority to farmers already using, or about to adopt, micro-irrigation systems.
- As electricity is free of cost for the agricultural consumers, the suggested financing model (with a 40 per cent contribution by the farmer) are unlikely to work.
- Alternatively, a third party may invest in the solar system and sell the gross-generated solar energy to the discom.
- To make this approach acceptable to the farmer, a 'solar farmer incentive' to reduce water and electricity consumption can be introduced.

The recent changes to the Motor Vehicle Act (Amendment) Act, 2019 is a step in the right direction which is instrumental in long-term wealth creation, and sustenance of the industry. Analyse.

KEY POINTS

- While the changes are many in Motor Vehicle Act (Amendment) Bill, 2019., the focus areas include road safety, citizen-government interaction, and last-mile connectivity.
- After the amendments, while state governments will continue to issue licences to the aggregators, the states will need to work in accordance with the guidelines issued by the Centre.
- Further, as cab aggregators use technology as a platform to conduct business, the law also requires them to comply with the provisions of the Information Technology Act, 2000.
- One of the most significant takeaways from the law is that of a statutory recognition to a ubiquitous, but nascent industry—moving the cab aggregating industry from operating at the fringes of the regulatory landscape to specific regulatory policies being formulated in the context of a dynamic industry.
- The Indian regulations can be expected to cover some of these aspects, which have been hitherto grey areas.
- Other positives for cab aggregators could include matters that bring in operational simplicity, such as recognition for digitized documents and clearly demarcated accountabilities of aggregators and drivers.
- While there is a welcoming notion perhaps for the cab aggregators, this could also lead to higher costs associated with compliance.
- Higher penalties for non-compliance of licence conditions, requirement to comply with provisions of the IT Act, and an increase in insurance costs could place more burden of compliance on such cab aggregators.
- Alignment with global practices, especially those dealing with customer safety and driver rights protection, are expected to have a positive impact on the society at large.

Discuss the important features that are needed to formulate a comprehensive policy in India that accounts for the distinctive characteristics of digital markets.

KEY POINTS

The difficulty our laws face in coping with digital markets is a matter of concern. Such difficulty stems from the contrast between digital markets and traditional markets that most laws, including competition law, centre their understanding on.

Platform-based markets:

- In these markets an intermediary provides a technological foundation connecting other parties such as buyers, sellers or advertisers.



- A unique feature is that the platform plays an infrastructural role which third parties transact upon. This results in the entrustment of inordinate power upon the platform, often making it indispensable for those operating upon it. Ex: MakeMyTrip case, stresses on the power of platforms to influence the visibility and discoverability of hotels.

Network effects:

- These exist where users derive increased utility from a good or service when the number of other users consuming the same good or service increases.
- For instance, increases in the user-base of a social network increase the possibility of connecting with other users, thereby enhancing its utility.
- Digital products often demonstrate strong network effects. Consequently, it is not enough for a new entrant to merely offer better quality and/or a lower price than the pre-existing ones, but it must also convince users of existing applications to migrate to its platform.
- The CCI, despite acknowledging the network effects operating in favour of taxi aggregators such as Ola and Uber, has not yet sustained a claim of dominance based on network effects by itself.

Return to scale:

- Economies of scale are the savings generated when the per-capita cost of production/delivery of a good/service decreases with an increase in the number produced/delivered.
- However, this phenomenon is amplified in the case of digital markets as every consumer of a digital good or service pays a price for the same without the seller incurring a significant marginal cost towards its provision.
- This return on investment in digital markets is therefore amplified far beyond traditional markets.

The need of the hour is to shun policy-making in silos and instead pursue a comprehensive policy which covers competition law, data protection law, information technology law as well as foreign investment and e-commerce policy.

Will the recently launched Atal Bhujal Yojana resolve the problem of depleting ground water resources in the country?
Critically Analyse

KEY POINTS

- Atal Bhujal Yojana is a World Bank-funded, central scheme aimed at improving groundwater management.
- It has been designed with the principal objective of strengthening the institutional framework for participatory ground water management and bringing about behavioural changes at the community level for sustainable ground water resource management.

Resolving the problem of groundwater

- Institutional strengthening for improving ground water monitoring networks and capacity building of stakeholders at different levels which will enhance ground water data storage, exchange, analysis and dissemination.
- Improved and realistic water budgeting based on an improved database and preparation of community-led Water Security Plans at Panchayat level
- Implementation of Water Security Plans through convergence of various ongoing/new schemes of the Government of India and State Governments to facilitate judicious and effective utilization of funds for sustainable ground water management.

Criticisms of the scheme

- Irrational use of tubewells depleting groundwater is not addressed properly.
- Water pollution in urban and rural areas are not integrated with the scheme.



- Traditional knowledge of conserving water is not integrated with the scheme.
- Awareness of rainwater harvesting structure has to be established in houses to restore groundwater.

4. GOVERNANCE

A decade of enforcement of the Competition Commission of India has provided an opportune moment for undertaking a review of its working and to adapt for future challenges. Discuss

KEY POINTS

- Within a decade, the CCI has made its presence felt around the globe and partnered with various international competition agencies.
- The ministry of corporate affairs, constituted the Competition Law Review Committee (CLRC).
- This report provides a roadmap for the competition law regime in India. This board's functions will be quasi-legislative, policy decisions and a supervisory role.
- The CCI would be enabled to delegate functions and allocate responsibilities to its members and officers along with setting up of performance reviews and performance standards for the organisation.
- To cater to combinations that arise via the Insolvency and Bankruptcy Code and to fast-track other combinations, a green channel has been formulated to provide automatic approval for certain combinations through self-assessment and pre-filing with the CCI.
- A green channel is a notified set of procedures for faster approval of combinations that is facilitated by consultations with the CCI and self-assessment based on criteria that have been recommended to be as objective as possible.
- The report also reflected on ensuring ways to address new challenges like a 'hub and spoke' cartel and other agreements of the new age that might not be strictly horizontal or vertical agreements. An attractive proposition is the contemplation of a new index, similar to the Ease of doing business index.
- It is hoped that with these proposed changes, the Act will prove to be an effective tool of realising the dream of making India a \$5-trillion economy, and protecting the interest of the consumers at large by ensuring healthy competition in the economy, leading to efficiency and sustainable economic growth.

Good Governance Index is a tool that will help in assessing the status of governance and the impact of interventions undertaken by both Central and State governments. Elucidate

KEY POINTS

- The objectives of GGI are to provide quantifiable data to compare the state of governance in all states and UTs, enable states and UTs to formulate and implement suitable strategies for improving governance and shift to result oriented approaches and administration.
- Various principles have been kept in mind while selecting the indicators, i.e. it should be easy to understand & calculate, citizen-centric & result driven, leading to improved results and applicable to all states and UTs, among others.
- The GGI takes into consideration ten sectors: 1). Agriculture and Allied Sectors, 2). Commerce & Industries, 3). Human Resource Development, 4). Public Health, 5). Public Infrastructure & Utilities, 6). Economic Governance, 7). Social Welfare & Development, 8). Judicial & Public Security, 9). Environment and 10). Citizen-Centric Governance.
- Difference indicators are given different weightage under one Governance Sector to calculate the value. E.g. Under Agriculture & Allied Sector, there are 6 indicators with different weightage, namely: Growth rate of agriculture and allied sector (0.4).

- Big States, b). North-East & Hill States and c). UTs. The states and UTs are ranked on all indicators separately, at the same time composite ranking is also calculated for these states and UTs under their respective groups based upon these indicators.
- Tamil Nadu has topped the Good Governance Index released by the Centre, followed by Maharashtra.
- Among the Union Territories, Puducherry emerged as the best-governed, ahead of Chandigarh and Delhi.
- In the North-East and Hill States category, Himachal Pradesh ranked first, followed by Uttarakhand.

5. EDUCATION

A country that aspires to become a \$5-trillion economy in five years must focus on fixing higher education and rapid urbanisation. Discuss

KEY POINTS

- India has made considerable progress in improving its gross enrollment ratio (GER) for tertiary education—from 21.5% in 2012-13, it rose to 26.3% in 2018-19. And, the government targets 30% by 2020.
- India has a very low human capital base for research—just 0.45% of the students enrolled in higher education are enrolled in doctoral programmes.
- There is no doubt that India has made significant progress in R&D capacity and output—in 2016, the US's National Science Foundation data shows, India overtook Japan as the fourth-largest producer of science and engineering research.
- Between 2003 and 2016, India's article count in Scopus, the world's largest catalogue of abstracts and citations went up from 27,000 to 110,000.
- The need, now, is to ensure that a critical number of science graduates receive the necessary support to enter post-graduation and get follow-on opportunities in research.
- It is also here that the fall in graduate engineering courses becomes worrying—technical education is key to innovation for the fourth industrial revolution, and India must focus on producing quality engineering graduates who can become part of the R&D ecosystem in companies, or enter the research pipeline at universities.
- Both quality of training and course content in engineering colleges must be radically rethought; else, the country will have the same high proportion of unemployable engineers that has been reported in the recent past.
- Higher education institutions in India's villages and semi-urban areas must focus on programmes that will skill the youth for the needs of local and traditional industry.
- Consolidation also must happen in the higher education space, as recommended by the draft National Education Policy, in which standalone institutions become part of multidisciplinary universities and colleges, to pool and optimise use of resources.

6. HEALTH

Biofortification offers a reasonable option not only to go beyond hunger, but also to solve the issue of hidden hunger. Comment

KEY POINTS

- Researches have established that in general diets in developing countries are deficient in vitamin A, zinc, and iron, resulting in increased mortality, morbidity, and health and development costs.
- In India, only 9.6% of the children between 6-23 months of age are able to get minimum acceptable diets. This means that children of comparatively economically well-to-do families, too, suffer from malnutrition—that too, during the most crucial phase of their mental and physical development.



- Biofortification, an agriculture-based approach to the development and dissemination of micronutrient-rich crops, offers a viable option to mitigate malnutrition and hidden hunger.
- Unlike the above-listed options, which demand considerable time and resources, biofortification is simple and economical.
- It mainly targets poor and rural households, where home production and consumption of staple food crops is significant, and consumption of the marketed surplus is most likely to remain within the community.
- Enriching staple crops with required micronutrients reduces people's nutritional vulnerability because, during economic shocks, the poor tend to reduce their consumption of higher-value food commodities that are naturally rich in micronutrients.
- Farmers, even with limited resources and market access, can grow biofortified crops since they don't need repeated purchases of seeds year after year—they can use a part of their produce as the seeds for the next year.
- For farmers to grow the biofortified crops, the nutrient-rich varieties should be economically remunerative.
- For consumers to consume, besides taste, texture, and visual appearance, awareness about malnutrition, easy availability, and access of cereals at an affordable price are crucial.

There is an urgent need to revisit the national nutrition strategy so that India can move towards achieving the goal of eradicating hunger and preventing malnutrition in all its forms. Explain

KEY POINTS

- There is evidence now that undernutrition (stunting, wasting, underweight) and overweight and obesity co-exist and promote each other.
- In India, 47 million people are stunted, 25 million people are wasted, and 196 million suffer from chronic hunger. About 500 million suffer from vitamin or mineral deficiencies.
- There are many causes for malnutrition and undernutrition in various forms, and thus this cannot be addressed through siloed interventions.
- Changes in the food system have to be made so that outputs per unit of water, energy, land and other inputs are optimised and footprint of agriculture and non-farm activities in the food system are managed with the planetary boundaries.
- Right from the World Declaration on Nutrition in 1992, nutrition plans have focussed only on undernutrition.
- For the first time, 2014 Rome Declaration on Nutrition laid down dietary-related non-communicable diseases targets.
- India's national nutrition policy (NNP) of 1993 focussed on undernutrition through supplementary nutrition and deficiencies of iron and Vitamin A.
- The 2018 national nutrition strategy continued the same with interventions around nutrition and healthcare of infants and young children, mothers, adolescents and address deficiencies of iron and Vitamin A.
- Poor progress on undernutrition is possibly due to the double burden of malnutrition which calls for an integrated approach and simultaneous action to address undernutrition and obesity and overweight together.
- Aflatoxin, a natural food contaminant, may lead to stunting and growth impairment in children, not only reducing their chances of long and productive lives, but perhaps also making them more susceptible to other illnesses. An unhealthy eating is often another factor.
- Addressing multiple dimensions and various forms of malnutrition requires an integrated policy, coherent action, and total transformation of the country's food system.



7. INTERNATIONAL RELATIONS

With Japan looking to build its defence ecosystem, there's a huge scope for both the nations to cooperate in manufacturing. Explain

KEY POINTS

- India and Japan concluded their maiden '2+2 Foreign and Defence Ministerial Meeting' in New Delhi recently.
- For India, this is the only other 2+2 dialogue apart from that with the US.
- This clearly shows the importance that New Delhi assigns to the relationship with Japan.
- As Japan opens up its defence sector, as envisaged in the 2018 National Defence Programme Guidelines (NDPG), there could be definite areas of cooperation in this sector too.
- Japan has agreed to undertake a third of the aircraft's manufacture and this could be an important step towards boosting the 'Make in India' initiative.
- For instance, if in the next round of armoured vehicles manufacturing India and Japan cooperate, Mitsubishi, which already is into manufacturing such vehicles, could jointly work with Indian companies.

Cyber security potential

- Artificial intelligence (AI) and chip manufacturing could set the trend for cooperation in cyber security and possibly the whole gamut of equipment modernising, and these could be made a part of the battle management system.
- Japanese companies are known for their superior chip-manufacturing capabilities and the next generation of AI-induced chips could be developed by the two nations and deployed. Even enabling 5G secured connectivity could be an area to dwell on
- The earlier announced \$12 billion 'Japan-India Make-in-India Special Finance Facility' fund is a very good step to boost confidence. Clearly, the next round of 2+2 should have a roadmap for the initial areas of cooperation.
- Besides continuing the military exercises, the Japanese NDPG and India's increasing focus on building the defence manufacturing ecosystem with thrust on 'Make in India' offer the best scope for improving bilateral cooperation.

The rise of Asian region is linked with peace and stability also needs the cooperation of India and China which enables all asian countries to prosper together. Analyse

KEY POINTS

- The liberal trading order has encountered protectionism in the form of tariff and non-tariff barriers, which explains why India's service exports which touch \$29.6 billion in the U.S. market, and pharma products, especially generic drugs, which account for 20% of global generic medicines.
- Movement of talent and the services sector, important for India, have not received satisfactory attention. Many of these concerns are central to India's position on the Regional Comprehensive Economic Partnership (RCEP).
- The momentum in manufacturing activity has weakened to levels unseen since the global financial crises. Key anchors in the global economy, including China, are experiencing a slowdown.
- Global engines of economic growth over the past three decades have shifted to Asia, first to the Asia-Pacific and now, more broadly, to the Indo-Pacific region that includes South Asia.

Shaping trade, economy

- India is also transforming into a knowledge-based, skill-supported and technology-driven society. A liberal FDI regime combined with a youthful demographic profile makes India an attractive destination. India attaches great importance to its relations with China, a large trade partner in goods.
- Since 2015, there has been a spurt in Chinese FDI in India (at around \$8 billion). There is great scope for China to participate in flagship initiatives such as the ‘Smart Cities Mission’ and ‘Skill India’ programmes.
- Bilateral trade today is approximately \$95 billion. India faces a huge and rising trade imbalance. The decision at the Mamallapuram Summit, in October, to set up a new mechanism to discuss the trade imbalance, is aimed at addressing this issue.
- The “**India-China Plus One**” framework, China and India could explore the potential to work together on Asian infrastructure and connectivity development on the basis of equality and an open and transparent model under the Asian Infrastructure Investment Bank (AIIB).
- It must be remembered that Asia’s rise is predicated on peace and stability. It is a sad fact that a stable regional security architecture has yet to emerge organically in Asia.

To be competitive in global trade and for better economic revival, India has to regulate imports from China optimally without affecting bilateral relations. Analyse

KEY POINTS

- Imports from China have curbed capacity creation and utilisation. This malaise must be addressed for economic revival
- China is now the proponent of free trade and globalisation at Davos. The OBOR and the RCEP are being promoted by China, which is on its way to becoming a superpower.
- It is useful to have a larger historical perspective, as India confronts a critical juncture. In the run-up to the RCEP negotiations, hardly any producer group in India saw benefits from joining the RCEP.
- They only saw adverse consequences and asked for carve-outs and protection. The experience of India’s FTAs with Asian countries has shown that the Indian industry has not experienced the anticipated gains.
- Growing imports of consumer goods, thermal power plants — and now solar panels and exports of primary products like iron ore and cotton — constitute India’s trade with China. All that is imported was being made, and can be made in India.
- The logic of free trade is for India’s growing demand to be met by China’s excess capacity and India’s inefficient, non-competitive capacities to close down without need for creation of new capacity.
- India needs to take a hard look at its choices. Creating global competitiveness and doing all that it takes to do so, including abandoning conventional ways of thinking, cannot be delayed.

There have been a positive movements in the hydro power sector in South Asia which can power up the economic cooperation in the region. Analyse

KEY POINTS

Global average of per capita consumption of power is 2,700 kWh. However, with less than 700 kWh per capita annual consumption in this region—between 1,100 kWh and 100 kWh in different countries—almost all South Asian countries are struggling to provide reliable 24×7 electricity to its people, let alone providing enough power for accelerating the growth of the economy in general and the rural economy in particular.

Important initiatives

The most remarkable outcome has been the amended cross-border power trade guidelines issued by India in 2018. This would enable trade of electricity from one country to another utilising Indian transmission infrastructure, and open up tremendous possibilities for regional power trade.

India-Bhutan



- Tala-Delhi transmission system and Tala hydropower project (1,020 MW) commissioned in 2006-07.
- Dagachhu (126 MW) JV with Tata Power commissioned in March 2015.
- Mangdechhu project (720 MW) commissioned in 2019 and PPA with India has been finalised.
- India has agreed to implementation of storage project Sankosh (2,585 MW) under the intergovernmental model.

India-Bangladesh

- First 500 MW high-voltage direct-current (HVDC) link at Bheramara (Bangladesh) with interconnection at Behrampur (West Bengal) was commissioned in October 2013, in a record time of less than three years, from concept level to commissioning.
- The Adani Group is setting up 1,600 MW project in Jharkhand with dedicated transmission system to Bangladesh, commissioning in December 2021.

India-Nepal

- Two large hydro projects of 900 MW each (Arun-III and Upper Karnali), awarded to Indian developers SJVN and GMR, respectively, have started construction; these will enhance cross-border trade by 1,500 MW.

India-Myanmar

A small interconnection between India and Myanmar has been established from Moreh (Manipur) to Tamu (Myanmar), and about 3 MW is being supplied.

The South Asia Power Secretaries Round Table was yet another initiative by the World Bank. It came out of the consideration that there was a need for informal interactions, distinct from formal official meetings and discussions that normally tend to be circumscribed by diplomatic considerations.

Do you think that recent decisions of Government of India have critically affected India's international stature? Comment

KEY POINTS

- It is a truism of international relations that rising powers, such as India, should seek out friends and allies on their periphery and maintain relations further afield that are of long-term benefit to their economic rise.
- For example, amid the widespread protests over the combination of the National Register of Citizens (NRC) and the Citizenship Act amendment, some implications need to be borne in mind for India's international relations. Bangladesh has been India's most stalwart partner in the neighbourhood. Co-operation on security and extremism reached new heights, and the economic relationship has also developed.
- But NRC problem has been compounded by the citizenship amendment law, which implies in its text and motivation that Bangladesh is not a secular country. This is seen as deeply offensive in Bangladesh, which has had divisive discussions about its identity before reaffirming its constitutional secularism.
- Domestic political concerns may have also played a part in India's decision to stay out of the Regional Comprehensive Economic Partnership.
- Recent actions, including the internet shutdown in Kashmir, have depleted that store of capital. The sharp growth slowdown means that India is a less attractive partner, and the actions taken against foreign companies operating on Indian soil, including changing the rules of the game at the last minute to benefit domestic players, reduce the number of advocates for New Delhi abroad.



The World Trade Organisation Appellate Body going into an inactive state is a serious setback for the global, rules-based multilateral trading order. Examine

KEY POINTS

The World Trade Organisation's Appellate Body (AB)—which is part of the WTO's dispute settlement mechanism—went into hibernation.

US's Stubbornness

- The AB has gone into hibernation because the numbers of AB members kept dwindling, coming down to just one, due to the US blocking fresh appointments.
- The US has also expressed other concerns such as the AB's treatment of Chinese state-owned companies, violations of statutory timelines as the AB often takes more time than stipulated to decide on a case, and AB rulings having precedential value.
- The US has turned out to be the biggest critic of the AB, while the Third World states like India are campaigning for its protection. The AB has actually become a victim of its own success.
- Both in terms of sheer volume of cases and the wealth of jurisprudence produced, the AB has outperformed most international courts and international tribunals.

Adverse implications

- The most immediate implication would be that if any WTO panel report were appealed, it would go into a 'void', as the AB doesn't have the minimum number of members required to hear the case.
- This would allow a country to block the adoption of the report if it loses a trade dispute, and thus not comply with the WTO panel decision.
- India, recently, has appealed against a WTO panel ruling, which pronounced India's certain provisions of the domestic export incentive initiatives as WTO-inconsistent.
- Likewise, the US has appealed against a WTO panel ruling in favour of India in the renewable energy sector, thus allowing it to continue with the WTO-inconsistent measures.

GS PAPER III

8. INDIAN ECONOMY

A well balanced combination of lower interest rates, fiscal expansion and a cheaper rupee could help recover India's economy. Analyse

KEY POINTS

The most startling fact about the Indian economy over the past few quarters is the collapse in nominal economic growth to its lowest level in two decades.

The latest quarterly nominal growth rate is lower than the incremental cost of government borrowing, a flashing amber light for a country such as India that also has a primary government deficit.

Interest rate reduction

- The Reserve Bank of India's (RBI's) monetary policy committee should sharply reduce its assumption of the equilibrium real rate of interest in the economy, and thus move towards a zero real policy rate in the coming months, though a minor uptick in headline inflation is expected.
- RBI had helped bring down the yield on the benchmark government bond from 12.2% in November 1998 to 5.1% in December 2003, during a similar period of weak domestic demand.



- Among other things, this measure helped the government reduce its cost of borrowing and also provided banks with a buffer as the value of their bond portfolios went up.

Role of fiscal policy

- The example of the 2009 stimulus shows that the failure to pull back in time can lead to balance of payments problems down the line, so using fiscal policy aggressively is not without its risks.
- Also, bond yields will jump unless the government can credibly signal that its fiscal expansion is merely a temporary response rather than a new trajectory.
- The total government borrowing is already soaking up most of the domestic financial savings of households.

Exchange rate

- A lower exchange rate can help reflate the economy too, but will also impose costs on firms that have large unhedged dollar borrowings.
- The coordinated use of monetary, fiscal and exchange rate levers will thus be a nuanced act.

Greater collaboration between the government and the private sector are needed for developing trade-smart schemes that have long-term sustainability to the growth of Indian industry. Discuss

KEY POINTS

- The first important trigger for change occurred in 2013-14 when India's per capita GNI (Gross National Income, earlier referred to as GNP or Gross National Product), assessed by the World Bank, breached the threshold of \$1,000.
- This development had a ripple effect in India's status as a 'developing country' under the WTO's Agreement on Subsidies and Countervailing Measures (ASCM), which regulates, among other aspects, export subsidies
- In anticipation of the inevitable, the government has been undertaking suitable steps, such as emphasising that Indian industry should reduce its reliance on export incentives and has to reinvent itself by increasing its competitiveness in the global market based on increased productivity of resources, improved quality, better efficiency and increasing reliance on data-driven business strategies.
- A meaningful trade policy framework needs to be rooted in an evidence-based approach, and rely on microeconomic data from the industry to enable targeted decision-making based on trade data analytics.
- Indian industry will also need to be proactive and establish appropriate mechanisms to capture data at the granular level, through innovative changes in accounting systems.
- The shift from export growth to broad-based employment and economic growth was highlighted in the Baba Kalyani report as well. This will also enable the new policy to shed the legacy of India's 1991 balance of payment crisis and look at the world with a new and aspirational approach and a perspective of global leadership.
- The ability of the government's policy to have real benefits will also depend on the extent to which Indian businesses can provide crucial strategic inputs to the government, a theme which was discussed at a recently held CII conference in Mumbai, on the Global Trade Scenario, aptly titled 'Navigating the New Normal'.
- Large industry houses, especially, will need to be better equipped with research and appropriate skill-sets, and apportion resources to be able to compliment and supplement government efforts.

To be competitive in global trade and for better economic revival, India has to regulate imports from China optimally without affecting bilateral relations. Analyse

KEY POINTS

- Imports from China have curbed capacity creation and utilisation. This malaise must be addressed for economic revival



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- The logic of free trade is for India's growing demand to be met by China's excess capacity and India's inefficient, non-competitive capacities to close down without need for creation of new capacity.
- India needs to take a hard look at its choices. Creating global competitiveness and doing all that it takes to do so, including abandoning conventional ways of thinking, cannot be delayed.

In the context of recent economic slowdown in India, the government will have to find ways to revive growth while remaining committed to maintaining the fiscal balance. Examine

KEY POINTS

- The Indian economy is in a difficult situation and the possibility of rating downgrades will only exacerbate the complications in economic management.
- Growth in the Indian economy slipped to a six-year low of 4.5 per cent in the second quarter of the current fiscal year and high-frequency indicators are not pointing to a sharp recovery in the coming quarters.
- Even though S&P rating agency expects economic growth to pick up, it rightly notes that a return to sustained high growth will depend on structural reforms.
- Among other factors, stress in both the banking and non-banking financial sectors is affecting the flow of credit in the economy, resulting in lower growth.
- This has also limited the transmission of lower policy rates of the Reserve Bank of India, despite the availability of ample liquidity in the system.
- Further, as S&P correctly highlighted, complications in the implementation of goods and services tax (GST) created some disruption in the economy.
- The importance of addressing all issues in the GST system cannot be overemphasised. The GST Council should comprehensively review and urgently address all the gaps in the system.
- The underperformance of the GST system has also worsened the fiscal position of both the central and state governments.
- Besides the pressure on sovereign ratings, higher deficit and borrowings can create distortions in the financial system, impeding growth in the medium term.
- Thus, the focus should be on easing restrictions on the functioning of markets, including factor markets such as land and labour, to push India's potential growth.
- The government should also revisit its approach to global trade. Stagnation on the exports front, as has been the case over the last few years, will restrict the possibility of returning to a higher growth path.



Discuss the reform measures that help India to increase economic growth to the baseline medium-term potential and help push up growth in a sustainable way.

KEY POINTS

- The IMF has listed reform measures that might help India increase economic growth to the baseline medium-term potential of 7.3 per cent.
- The clean-up of bank balance sheets should be completed along with strengthening governance in public sector banks (PSBs) and better oversight of non-banking financial companies (NBFCs).
- Although the government has infused a significant amount of capital into PSBs, there is practically no movement in terms of governance reforms. Further, the central bank will need to augment regulatory capacity for better oversight of the system, including the NBFC sector.
- Fiscal consolidation in the medium term should be anchored to the recommendations of the Fiscal Responsibility and Budget Management Act review committee.
- General government debt needs to be brought down to 60 per cent of gross domestic product (GDP) from about 69 per cent in 2018-19.
- Fiscal consolidation would require savings through rationalisation of subsidies and augmenting revenues by expanding the tax base.
- This will help reduce the crowding out caused by higher public sector borrowing requirement, which exceeds the net household financial savings of 6.6 per cent of GDP.
- The government should focus on reforms in product, labour and land markets. Since the policy space on the fiscal side is virtually non-existent and there are limitations to the extent monetary policy can support growth in the given macro environment, the government should focus on wider reforms that will help increase growth in the medium term.
- For instance, comprehensively addressing the problems in the goods and services tax system will not only help augment revenue but also improve the ease of doing business.
- Further, there is a strong case for trade liberalisation to support growth and employment.

While the states are right in pushing the Centre to pay their dues on a timely basis, they would also need to look at other measures to increase tax revenue. Elaborate

KEY POINTS

- Compensation cess was introduced as a relief for the loss of revenue states would incur due to the implementation of GST.
- Since the states have given up their powers to collect certain taxes on goods and services, they were guaranteed a 14% tax revenue growth in the first five years after GST implementation.
- The compensation cess was to be provided to states till July 1, 2022. States' tax revenue as of FY16 was taken as the base year to calculate this 14% growth.
- Any shortfall was supposed to be compensated by the Centre, using funds specifically collected as compensation cess.
- There are delays in passing on the money to the states which are due to slippage in collections under GST.
- Given that the states have a constitutional right to the compensation, they tend to be complacent in trying to collect GST revenue.
- The states should support the Centre in the implementation of GST to curb tax evasion. This will ensure that the government's tax revenues—and, therefore, automatically that of the states—go up.



- For example, the decision, taken in the recent GST council meeting, to block the e-way bill facility on non-filing of two consecutive GSTR-1 returns should definitely go a long way in increasing tax compliance.
- Besides the effective implementation of the recent proposals of the GST council meeting, states should support the Centre on other critical proposals such as e-invoicing to curb the fraudulent availment of input tax credit.
- Also, states should take a cue from the Centre and introduce amnesty schemes under VAT/ Entry tax, so that any blocked revenues that are under litigation would also flow into their coffers. These measures will also help the states reduce dependency on the Centre.

Do you think that states' operational freedom to function within their specified jurisdictions is highly curtailed in the country? Comment

KEY POINTS

- The 14th Finance Commission (FC) recommended a substantially higher share of the tax revenues for the states, with a clear objective to strengthen their autonomy.
- Over the years, states have come to function more as agents of the Union than as autonomous units.
- Jammu and Kashmir, a full-fledged state, was split into two union territories at the time when there was Governor's rule and the state assembly was in suspension.
- This was done without ascertaining the views of the State Legislature in contravention of Article 3 of the Constitution.
- The 14th FC hiked the states' share in the Centre's tax revenues by 10 ppt at one go—from the 13th FC's 32% recommendation to 42%—to promote states' autonomy in resource allocation.
- But, the Centre mobilised revenues by levying cesses and surcharges, not included in the divisible pool. Hence, shrinking the divisible pool of resources available for transfers to states.
- The CAG, in its reports, has highlighted the issue of underutilisation of the proceeds from cesses. It has also pointed out that the monies raised for specific purposes through some of the cesses have been diverted for other purposes by the Centre.
- The recent implementation of the Goods and Services Tax (GST) can be cited as a remarkable act of cooperation between the states and the Union.
- Yet, the recent drastic cut in corporate tax, with its adverse impact on the divisible pool, and not releasing GST compensation to states falling short of the stipulated growth on time, as agreed upon, would deter the promotion of cooperative federalism.

Though India's efforts to expand access to organised financial systems through digital payments have started, digital literacy is integral for financial inclusion. Comment

KEY POINTS

- As a larger part of the RBI's policy to promote digital inclusion, making online remittances through National Electronic Funds Transfer (NEFT) and Real Time Gross Settlement System (RTGS) facilities in savings bank accounts free from January 2020 is indeed significant.
- The RBI reinforces the easing of the digital payment foothold with several continuing collaborative measures that can evolve a robust and seamless payment ecosystem.
- Enhancing access to financial touch points and reducing the cost of access have been the twin drivers of digital inclusion.

Spurt in digital infrastructure

- Moving beyond just setting up full-fledged bank branches, banks have started expanding the base of alternate electronic delivery channels at a much faster pace, after mobile connectivity and network, and Internet services were made accessible and affordable to people at the bottom of the pyramid.
- The number of basic savings bank deposit accounts quickly increased due to the rollout of the Pradhan Mantri Jan Dhan Yojana (PMJDY), adding mass of new customers.

Financial awareness

- In order to make FI work to ensure that the benefits of inclusion reaches the intended target group of the society, seminal changes need to be introduced in the spread of financial and digital literacy and credit counselling. While many stakeholders have been doing sporadic work, they are not coordinated enough to optimise its effectiveness.
- Inadequate institutional efforts to disseminate financial awareness at the grassroots level are keeping even financially connected masses (those having bank accounts and debit cards) away from the formal financial system. Adequately equipping and empowering institutions engaged in disseminating comprehensive literacy programmes will be essential to unleash the potentiality of the huge financial and digital infrastructure built and designed to sub serve FI.
- It is the right time to accelerate literacy campaigns ,particularly when digital culture is spreading fast with introduction of thd GST, FASTags and other online utilities of daily use.
- Right synchronisation of comprehensive literacy efforts with the evolving payment and settlement ecosystem should be able to take India close to the end-state objectives of FI by 2030, by when the sustainable goals of UN are to be achieved.

9. AGRICULTURE

Does the policy of fertilizer subsidy to farmers will work against the government's stated goals for the agriculture sector? Examine.

KEY POINTS

- India's experience with fertilisers, in the later part of the Green Revolution, prompted it to adopt a policy of subsidising fertilisers.
- Increased fertiliser usage also meant a concomitant spurt in agricultural production; total foodgrain production reached 284.95 mmt in FY19—an over-three-fold increase from the production in 1977-78.
- With the sharply increased share of urea subsidy in the total fertiliser subsidy—and the fact that nearly 77% of the cost of domestic urea production is subsidised.
- Over time, the phosphatic and potassic content of the soil is affected greatly even as nitrogenous content is thrown off balance.
- The indicated N:P:K usage for Indian soil is 4:2:1. While it stood at 7:2.7:1 in 2000-01, it was still askew at 6.1:2.5:1 in 2017-18.
- Given Indian soils have relatively low nitrogen use efficiency (average of 22% estimated in 2008), the bulk of the urea applied contaminates ground- and surface water and the atmosphere.
- So, the current fertiliser policy is subsidising pollution. The bulk of the applied urea is lost as ammonia (NH₃), dinitrogen (N₂) and NO_x (nitrogen oxides)—while the ammonia gets converted to nitrates, increasing soil acidity, NO_x gases are major air pollutants. Nitrate contamination of groundwater, which leads to conditions such as methaemoglobinaemia (commonly known as blue baby syndrome), has reached far beyond WHO safe limit in Punjab, Haryana and Rajasthan.
- The government keen on shoring up domestic production—even if the costs are uncompetitive—having announced a plan to rejuvenate five plants.



- This not only goes against the Prime Minister's call to halve urea consumption by 2022, but will also make domestic urea even more uncompetitive as the fixed costs will be higher for the rejuvenated plants.

Uneviling White Revolution 2.0 is expected to consolidate the milk production in the country and make India as a global leader. Comment

KEY POINTS

Marketing and innovation, thus, are increasingly becoming important on the cusp of White Revolution 2.0.

White Revolution 2.0

- The new revolution has effectuated dairy firms' marketing strategy for milk and milk products, resuscitating the outlook of product-market mix.
- When the market integration took place post-liberalisation and Milk and Milk Products Order (2002) was abolished, dairy businesses observed a radical shift toward a strategic product diversification.
- Market structure, conduct, and performance has dramatically changed post 2000s.
- Besides the established cooperative federations like Amul, other state cooperative federations and multinationals (namely, Nestle, Danon, and Lactalis) are aggressively harnessing the untapped business potential.
- Strategic partnership and competitive intelligence can create and distribute tangible benefits by strengthening the backend and frontend supply chain.
- Increase in the market share depends on how dairy firms' capabilities and their resources are utilised given the opportunities and threats emanating from emerging markets economies.
- Digital technology-enabled dairy firms need to identify their compatible partners and competitors for co-creation through product-process innovation via relationship/value-based marketing.
- National Dairy Development Board (NDDB) plays a pivotal role in dairy businesses through institutional and structural/policy reforms.
- For example, National Dairy Plan flagged off in 2012 at the auspices of NThe phase one aimed to improve milk production and animal breed development.

10. INFRASTRUCTURE

The Indian Railways should improve its speed and efficacy at a time when air travel has emerged as a serious competitor. Discuss

KEY POINTS

- The deterioration in the financial performance of the Indian Railways in 2017-18, to its worst officially recorded since 2000-01, is a result of the transporter's inability to grow its revenues to match its ballooning expenses — or rather its inability to curtail expenses in the face of slowing revenue growth.
- The deterioration has been rapid after 2015-16 when the operating ratio was 90.5 per cent. The Comptroller and Auditor General of India (CAG) has reported it as the worst performance in a decade.
- Railways' inability to even incrementally raise passenger fares for long-distance as well as suburban services at regular intervals is the biggest impediment to revenue growth.
- The ticket fare of Indian railways is becoming equivalent to the Indian air ways, despite the efficiency on carrying passengers in railways is very high.
- Indian Railways need to invest in modernisation and maintenance of rolling stock, addressing man power shortages that can have safety repercussions.



- Developing and leasing Railways' land in prime locations could help raise revenues.
- The Railways should emerge as the preferred mode of transportation across medium and long distances, owing to its energy efficiency compared to air and road.

Diversifying the areas of production in northern India along with drip irrigation and better storage technology can help avert dynamic fluctuations in the onion trade. Examine

KEY POINTS

- Kharif and late-kharif onions have a short shelf-life. They last for about a month after harvest. About a quarter of the annual supply comes from the kharif crop, and 80% of it is from Maharashtra and Karnataka. Disruption of supply from these two states has a ripple effect across the country.
- Heavy and prolonged rain damaged the transplanted seedlings and also destroyed late kharif nurseries.
- Spreading the production of onions across the country and close to the places of consumption can help avert such situations.
- The sandy loam of the Indo-Gangetic Plain is just right for onions as it drains well. Flooding is an issue for which he recommends raised-bed planting. A drive, thus, to encourage production in this belt could check onion price fluctuations.
- Better storages will also help. Currently, onions are stored at ambient temperature in raised floor structures with side slats (for ventilation) and asbestos roofs.
- These are low-cost storages, which the Maharashtra government subsidises. In open ventilated storages, losses can be as high as 30-40% or even more, depending on the outside temperature and relative humidity.
- Onions last longer in cold storages, but sprout when kept in the open, unless irradiated.
- The package of practices it has developed including planting on raised beds (ridges) and use of drip irrigation can improve yields.
- There are a set of farming practices to improve durability including lesser use of nitrogen, maintaining moisture during dry spells, and stopping irrigation a fortnight before harvesting.

The privatisation of Air India poses a challenge of integrating the North East with the rest of the country, and retaining air connectivity in the region. Explain

KEY POINTS

- Air India continues to bleed, with no respite in sight. This, after the government infused `17,320 crore of taxpayer money over the last five years.
- An ethnically, culturally, and geographically diverse region, the NE is connected with the rest of the country through a narrow corridor of approximately 21 kilometres.
- Within the NE, connectivity initiatives are underway, the most famous being the Bogibeel bridge that connects Dibrugarh to Dhemaji, supplementing the Kolia Bhomora Setu.



- However, such projects have long gestation periods, and are focused on intra-regional connectivity. Air connectivity, therefore, continues to be the fastest and most economical means.
- The government, in 2016, launched the regional connectivity scheme UDAN.
- Some of the Alliance Air flights are operated under an MoU with the North Eastern Council (NEC) and get funding support.
- Interestingly, Alliance has not turned a profit for several years, and most recent estimates peg its losses upwards of Rs 250 crore.
- The NE flights, for the most part, are loss-making due to cyclical demand, irrational cost structure, and low passenger volumes.
- In the event of a sale of Air India, any buyer will almost certainly revisit the airline network. Airports that will lose connectivity completely include Lakhimpur and Tezpur in Assam, and Pasighat in Arunachal Pradesh.
- This poses a challenge for the government because the North East needs to be integrated with the rest of the country.

11. S & T

Digital technology start-ups in India have unleashed their potential in improving crop production systems, optimising utilisation of critical resources, yet need to consolidate their business. Examine

KEY POINTS

- The year 2019 turned out to be a golden year for the 450-odd registered agriculture-technology start-ups, as they witnessed a growth rate of 25% (Nasscom, 2019).
- The “food print” product promoted by Jivabhumi is a produce-based aggregation and food traceability solution working for integrated agriculture development in Karnataka.
- In parallel, Samudra Network offers digitisation services for farmer producer organisations using mobile applications and dashboard.
- Farmer Connect, a blockchain-based app, helps improve traceability for coffee value chain in Karnataka, Kerala and Tamil Nadu.

Consolidating agri-startups

- Agri/dairy-tech start-ups, business-to-business (B2B) is emerging as a revenue-generating segment relative to B2C and, thus, these start-ups need to partner with corporates and government agencies for value creation and appropriation.
- Public-private partnership (PPP) in agricultural value chains is gaining ground for start-ups as they can benefit to private as well as public sector through formalising value chain finance, improving decision-making, streamlining direct benefit transfer or subsidies, accessing large markets.



- Fund-raising remains a challenge as start-ups require a few critical years to withstand the test of time. Impact investors can, therefore, come forward to enable performing start-ups achieve their scalability and viability in value chain businesses.
- Agri-tech start-ups regulation calls for a robust policy framework—integrating financial inclusion, agribusiness incubation and acceleration, data privacy and sharing, and licensing policies into a single-window system.
- Agriculture and dairying is a state subject, agriculture and animal husbandry universities and anchored extension agencies need to identify potential start-ups for tie-up for technology solutions such as farming as a service and crop/livestock management.

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Consolidating agri-startups

- Agri/dairy-tech start-ups, business-to-business (B2B) is emerging as a revenue-generating segment relative to B2C and, thus, these start-ups need to partner with corporates and government agencies for value creation and appropriation.
- Public-private partnership (PPP) in agricultural value chains is gaining ground for start-ups as they can benefit to private as well as public sector through formalising value chain finance, improving decision-making, streamlining direct benefit transfer or subsidies, accessing large markets.
- Fund-raising remains a challenge as start-ups require a few critical years to withstand the test of time. Impact investors can, therefore, come forward to enable performing start-ups achieve their scalability and viability in value chain businesses.
- Agri-tech start-ups regulation calls for a robust policy framework—integrating financial inclusion, agribusiness incubation and acceleration, data privacy and sharing, and licensing policies into a single-window system.



- Agriculture and dairying is a state subject, agriculture and animal husbandry universities and anchored extension agencies need to identify potential start-ups for tie-up for technology solutions such as farming as a service and crop/livestock management.

What is e-plane? Can the e-plane make commercial air travel low-cost and environmentally friendly? Explain

KEY POINTS

- A Canadian seaplane operator successfully test flew the world's first all-electric commercial aircraft, launched a new era of aviation.
- It is a Plane powered with renewable energy don't produce CO₂ or other climate-damaging emissions such as nitrogen oxide and particles.
- It is now proved that low-cost, environmentally friendly, commercial electric air travel can be a reality in the very near future.
- According to the International Air Transport Association (IATA), air transport contributes up to 2 per cent of global manmade carbon dioxide emissions.
- The propeller lifts the aircraft forward, using up fuel in the process, and emitting carbon dioxide and other gases into the atmosphere.
- It could set a trend for more **environmentally friendly flying**.
- Cheaper short-haul flights powered by electricity could transform the way people connect and where they work.
- Electric planes are nearly silent, they have the potential to be flown and landed near dwellings and businesses.
- These facts mean that in a couple generations, teenagers could be getting a pilot's license rather than a driver's license and landing their small aircraft in a high school parking lot.
- It can make the batteries lighter, then we can increase the energy savings and flying range of airplanes.

What is meant by Hydrogen fuel cell? Examine the feasibility of hydrogen-based technology to deal with vehicular air pollution in the capital region.

KEY POINTS

Hydrogen Fuel Cell

Hydrogen fuel cell works much like an electric battery, converting chemical energy into electrical energy using the movement of charged hydrogen ions across an electrolyte membrane to generate current.

Feasibility in Capital region

- Fuel cells have strong advantages over conventional combustion-based technologies, given that they produce much smaller quantities of greenhouse gases and none of the air pollutants that cause health problems.
- Also, if pure hydrogen is used, fuel cells emit only heat and water as a byproduct. Such cells are also far more energy efficient than traditional combustion technologies.

- Unlike battery-powered electric vehicles, fuel cell vehicles do not need to be plugged in, and most models exceed 300 km of range on a full tank. They are filled up with a nozzle, just like in a petrol or diesel station.

Challenges

- While hydrogen based EVs do not generate gases that contribute to global warming, the process of making hydrogen needs energy — often from fossil fuel sources. That has raised questions over hydrogen's green credentials.
- Also, there are questions of safety — hydrogen is more explosive than petrol.
- The other major hurdle is that the vehicles are expensive, and fuel dispensing pumps are scarce. But this should get better as scale and distribution improves.

Progress in India

- In India, so far, the definition of EV only covers BEVs; the government has lowered taxes to 12%. At 43%, hybrid electric vehicles and hydrogen FCEVs attract the same tax as IC vehicles.
- The Ministry of New and Renewable Energy, under its Research, Development and Demonstration (RD&D) programme, has been supporting various such projects in academic institutions, research and development organisations and industry for development.
- The Ministry of Science and Technology has supported two networked centres on hydrogen storage led by IIT Bombay and Nonferrous Materials Technology Development Centre, Hyderabad. These involve 10 institutions, including IITs, and IISc, Bangalore.

Can India's ASAT test be justified as a peaceful exercise in the fears of an imminent arms race in outer space? Comment

KEY POINTS

- India has been internationally recognised for its space-faring prowess for decades, given its unique ability to manufacture innovative technology at economical rates.
- The ASAT technology, on the contrary, was purely offensive in nature. It used “kinetic kill” technology, which employs the kinetic energy of the projectile to strike a target at high speeds.

Legal perspective

- A significant risk of ASATs is that their use would likely lead to indiscriminate consequences, as rendering the target temporarily or permanently dysfunctional may impact other objects in the vicinity.
- The Outer Space Treaty, to which India and most nations are party, stipulates that outer space and celestial bodies must be used “exclusively for peaceful purposes,” and prohibits testing of weapons and conduct of military manoeuvres.

Show of force



- Given that there was no imminent threat to justify self-defence, and that Mission Shakti was directed against India's own space object, the ASAT test would hardly constitute a legitimate use of force under international law.
- If legality of the ASAT itself is considered insufficient to demonstrate the errors of India's actions, the consequences of the ASAT test arguably violated Article IX, which restricts activities that cause "potentially harmful interference with the activities of other states."

Damaging debris

- Mission Shakti generated hundreds of pieces of debris; months later, approximately 50 fragments still remain in orbit.
- These fragments are at great risk of colliding with each other, and possibly other satellites, which would result in the generation of even more debris.
- Non-binding instruments, such as the Space Debris Mitigation Guidelines and the approved Guidelines for the Long-term Sustainability of Outer Space Activities, indicate there is growing consensus on the avoidance of intentional debris generation.

Partnerships with leading global institutions in fundamental and application-based research by Government of India will ensure that the ideas and implementation strategies are made globally-relevant. Examine

KEY POINTS

India's strengths in science and technology are renowned, as is our tenacity in scientific development, exemplified by the bold progress of our space and nuclear energy programmes.

Continuous generation and curation of ideas

- Building the infrastructure in the form of world-class research labs with state-of-the-art equipment in universities and fundamental research institutions.
- Partnerships with leading global institutions in fundamental and application-based research will ensure that our ideas and implementation strategies are globally-relevant.
- Incentivise young talent to continue with research and specialisation by ensuring they are economically taken care of through fellowships and grants.
- Intervention during the educational years to nurture talent in schools and colleges is essential. Widespread access to tinkering labs, world-class labs at universities, and other amenities are required.

Deep-tech investment strategies

Deep science innovation often constitutes a substantial amount of initial research, protracted testing and validation cycles, and an extensive generation of intellectual property (IP) that contributes to the embedded value of the technology.

Long-term vision

India has already set an ambitious goal of \$5-trillion GDP by 2025, and \$10 trillion by 2030.

We need to:

- Address domestic challenges, identify critical verticals that can accelerate India's socio-economic growth, and create long-term investment strategies for each.
- Within the broader policy goals, technology development needs special attention. For example, India has already set an exceptional zero-emission target for 2030.
- The idea of a bold vision is that Indian society and quality of life will have advanced dramatically in 20-30 years. Globally-accepted markers like the Innovation Index are useful to track these disruptive changes.

Despite the government's legislative, technical and institutional measures for addressing issues related to cyber security, the number of cyber-attacks have gone up rapidly. Examine

KEY POINTS

Initiatives by government

- Cyber Swachhta Kendra (Botnet Cleaning and Malware Analysis Centre) has been launched for providing detection of malicious programmes and free tools to remove such programmes.
- Issue of alerts and advisories regarding cyber threats and counter-measures by CERT-In.
- Issue of guidelines for Chief Information Security Officers (CISOs) regarding their key roles and responsibilities for securing applications / infrastructure and compliance.
- (vi) Formulation of Crisis Management Plan for countering cyber attacks and cyber terrorism.
- (ix) Conducting cyber security mock drills and exercises regularly to enable assessment of cyber security posture and preparedness of organizations in Government and critical sectors.

Cyber attacks/ scams

- A common link between all the victims seems to be that they are well-educated. They blindly believe in the cyber fraudsters, who get in touch with them over mobile phones and through social media, and get cheated.
- Online fraudsters manage to collect a large amount of information about their potential victims.
- This bulk data is sold to cyber fraudsters, who then contact these people by making phone calls, sending SMSs and emails etc about fraudulent schemes like online lotteries.

Preventive steps that can be taken

- Citizens should avoid submitting details like bank account numbers, ATM card numbers and other information with strangers or any unknown person over the phone.

- Suspicious online offers and messages, or emails sent by unknown persons, should be ignored.
- It is essential that banks conduct stringent verification of KYC documents while opening bank accounts.
- Also, citizens should report to the police any suspicious contact numbers and emails that offer fraudulent schemes.
- No money transfers should be made to any bank account without confirmation about the scheme offered online by any website.

Does the use of face recognition technology result in mass surveillance of citizens without their concern by the state? Critically analyse

KEY POINTS

Rationale for use of technology

- The National Crime Records Bureau (NCRB) tendered out for technical help to build a database for the police match “persons of interest” with pictures, including pictures from sources like newspapers, social media and TV grabs, etc.
- The system should allow the police to carry out “fast and accurate face recognition” in a “live environment”, according to the tender. The NCRB says this would help to identify missing persons.
- The face-recognition database would not, according to the NCRB, be integrated with Aadhaar, which includes photographs and other biometric data.
- In addition to that database, CCTVs are up and running in both public spaces and closed environments. It’s likely that your image is being captured multiple times on a normal day on multiple CCTV cameras, with the data stored and processed by multiple organisations. The police already uses CCTV images to levy traffic fines.

Democratic overreach

- It involves collection and processing of private personal data without consent.
- However, India’s proposed Personal Data Protection Bill, which has not yet been passed in Parliament, does not contain specific protections against this. It proposes to give all government agencies and organisations an open licence to collect and process data, without consent.
- Digital photographs of people are among the easiest things to collect without consent, or knowledge.
- Face recognition technology and its use in mass surveillance by sundry governments is deeply contentious. It has been banned in several jurisdictions.
- It also has technical flaws — for example, false positives lead to innocents being harassed. Courts and judges may not be sufficiently techno-savvy to understand the limitations, or the scope for framing and digital forgery if this is used for police work.



12. ENVIRONMENT

Restoring grasslands in Saurashtra is the key to make big cats thrive in their natural habitat. Analyse it in the context of land degradation neutrality.

KEY POINTS

- The recent UN-led conference to combat desertification committed to achieving land degradation neutrality by 2030. At this conference, India committed to restoring at least 26 million hectares of degraded land by 2030. Gujarat can begin with restoration of the grasslands in Saurashtra.
- Private vidis, gauchars (community grazing-lands controlled by village panchayats) and government wastelands supplement these vidis.
- Most of these vidis are part of the 22,000-sq km Greater Gir landscape, the last abode of Asiatic lions.
- A good lion habitat must have a good prey-base. For a healthy prey-base, grasslands are the key. Lion conservation efforts are focused on habitat improvement and, by extension, on improvement of grasslands.
- Dispersal of lions from the core Gir forest was possible due to a matrix of grasslands and open patches in the Greater Gir area.
- They can make a very good habitat for lions while also meeting requirements of the locals, also in one way combats the process of desertification especially near the fringes of Thar desert by arresting the land degradation.
- Over a period of time, however, these grasslands have degraded owing to invasion of woody and shrubby species and have turned into somewhat unproductive woodlots.
- This gradual, unattended shift has affected both ecology and economics of the region. The net result is that the landscape is suffering the tragedy of commons and a vicious self-perpetuating circle of unproductiveness.
- Grassland restoration will not only have positive ecological effects on long-term lion conservation, it will also yield significant socioeconomic benefits to the locals.
- Just like with lion conservation, grassland restoration can also be done with the participation of local communities.

The 14th CoP to the United Nations Convention to Combat Desertification (UNCCD), hosted by India, adopted that land degradation is largely responsible for climate change or global warming. Examine

KEY POINTS

- The 14th Conference of Parties to the United Nations Convention to Combat Desertification (UNCCD), hosted by India, adopted the 'New Delhi Declaration', land degradation is largely responsible for climate change or global warming.
- Now, there's a cause-and-effect relationship between 'climate change' and 'land degradation'. For satisfying the present-day life-style of the people, a large number of different kinds of items needs to be produced.
- The requirement for huge tracts of land for these activities led to large-scale de-forestation, especially owing to the industrialised West.
- Now, the poorer countries of the East are also destroying their forests, though they are doing so to fight their abject poverty.

- In short, deforestation, which in itself raises carbon emissions by 25 per cent, along with all human activities pursued on the land, is the real cause of climate change in the form of extreme weather conditions like intense and untimely rains, floods, soil erosion, and high temperatures (the 2015-19 period is considered the hottest ever).

Mitigation strategy

- **Restore at least 150 million hectares** of degraded land the world over by 2030 so as to increase the Earth's capacity to absorb two giga tonnes of carbon di-oxide.
- By investing \$1 in land restoration, a return of \$10 can be expected with prudent farm practices and water management. India has already increased its land restoration target to 26 million hectares from 21 mha committed earlier in its NDCs.
- **Stop building** infrastructure on danger zones such as flood plains or at the foot of unstable hills and build climate-resilient houses in big cities/towns. And, completely avoiding civic structures not geared to cope with sudden demands of extreme climate events.
- **Recognise the vital role** of women in land restoration and assure land tenure security to locals. Also incorporate indigenous knowledge for land restoration.

The new IPCC assessment underscores the need for unprecedented and urgent action in all countries that have significant greenhouse gas emissions. Explain

KEY POINTS

- The important reports of the Intergovernmental Panel on Climate Change (IPCC), on the **impact of higher global temperatures** on land, oceans and the cryosphere, lend further urgency to the task before countries now meeting in Madrid for the UN conference.
- The IPCC scientists, whose research helps the international community decide on actions to reduce greenhouse gas emissions, are worried that even under the most optimistic scenarios, human health, livelihoods, biodiversity and food systems face a serious threat from **climate change**.
- In the case of oceans and frozen areas on land, accelerated rates of loss of ice, particularly in Greenland, the Arctic and the Antarctic, will produce a destructive rise in sea levels; increases in tropical cyclone winds, rainfall and extreme waves.
- This is an alarming scenario for the 680 million residents of low-lying coastal areas, whose population may go up to one billion by 2050, and for those living in small islands.
- The new IPCC assessment underscores the need for unprecedented and urgent action in all countries that have significant greenhouse gas emissions.
- It strengthens the case for industrialised nations to provide liberal, transparent funding to developing countries under the Paris Agreement, reinforcing the principle of Common But Differentiated Responsibilities and Respective Capabilities, and recognising that rich countries reduced the carbon space available to the poor.
- There is a yawning gap between planned emissions cuts, and what needs to be done by 2030 to contain **global temperature** rise at 1.5°C.

With solar and wind now being the cheapest sources of electricity, India must take leadership to join industrialised nations in becoming net carbon neutral. Discuss

KEY POINTS

- India has shown leadership in facilitating the Paris agreement, and making what then appeared a highly ambitious voluntary national commitment.

- This was followed by setting up the International Solar Alliance. The National Solar Mission was launched in 2010 with the target of generating 20,000 MW of solar power by 2020-22.
- It is time for India to move on to achieving net carbon neutrality. From the outset, India's position on climate change has emphasised the per capita principle; on grounds of equity, every human being should have the same right to emit carbon dioxide.
- Electricity from solar and wind is now cheaper than all other sources. It, therefore, makes commercial sense to exploit the full wind power potential, and not to burn any coal for electricity.
- Solar thermal power with storage offers great promise. Heat from the rays of the sun are reflected through giant mirrors, and concentrated to heat molten salt. The heat trapped in the molten salt is then used to generate electricity at night through a conventional turbine.
- India could start building a few such plants, with competitive tariff bids, which have helped lower costs for conventional solar power. The same could be done with battery storage. A good beginning is being made in Andaman.
- Transport is the next largest contributor to carbon emissions in India. Electric vehicles have zero carbon emission of their own. As the carbon emission per unit of electricity declines, and finally becomes zero, carbon emissions from electric vehicles, too, would become zero.
- The Railways are, fortunately, moving towards full electrification as it makes good commercial sense. Thus, surface transport in the country could, as of now, become nearly carbon neutral with no significant additional cost.
- The major industrial sectors, such as steel, cement, and petrochemicals, pose technological challenges along with cost and competitiveness issues in moving towards zero carbon emissions.
- Indian industry is becoming more energy efficient, and would be well poised to move towards lower carbon emissions along with global industry.

Carbon markets, which allow for buying and selling of carbon emissions with the objective of reducing global emissions, is an unfinished agenda from last year's meeting in Katowice, Poland.

KEY POINTS

The market mechanism

- Under the Paris Agreement, every country has to take action to fight climate change. These actions need not necessarily be in the form of reduction in greenhouse gas emissions, which can constrain economic growth. India, for example, has said it would reduce its emissions per unit of GDP.
- Only the developed countries have included absolute emission cuts in their action plans. Yet, there is scope for absolute emissions reductions in developing countries too.
- For example, a brick kiln in India can upgrade its technology and reduce emissions. But because India does not need to make absolute reductions, there is no incentive to make this investment.

What is contentious

- Developing countries have several million unsold CERs (certified emission reductions), each referring to one tonne of carbon dioxide-equivalent emission reduced, from the Kyoto regime.
- Under the Kyoto Protocol, only developed countries had the obligation to reduce emissions. In the initial phase, some of these were interested in buying CERs from projects in India or China, which were not obliged to make reductions.
- India has about 750 million unsold CERs and, along with other similarly placed countries, wants these credits to be valid in the new mechanism too.



- Developed countries are opposing it on the ground that the rules and verification procedures under the Kyoto Protocol were not very robust; they want the new mechanism to start with a clean slate.
- The new mechanism envisages carbon credits as commodities that can be traded multiple times among countries or private parties.
- It is important to ensure that in this process, credits are not counted at more than one place; whoever sells carbon credits should not simultaneously count these as emissions it has reduced.

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