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G.S PAPER I

1. HISTORY

Bala Gangadhar Tilak's imprisonment by invoking the law of sedition failed to suppress the freedom struggle. Analyse

KEY POINTS

- Tilak's first trial for sedition had its origin in the famine of 1896. Kesari, the weekly newspaper started by Tilak, had a series of articles that criticised the conduct of officials who insisted on collecting land tax even during a famine, and for not implementing the Famine Relief Code.
- Bubonic plague struck Pune in 1897, which incidentally forced the British administration to enact the Epidemic Diseases Act, 1897. To stem the spread of this contagious disease, repressive measures were adopted by Walter Charles Rand, who was appointed as a special duty officer.
- Tilak had written strong articles condemning the brutality of the measures adopted even before this murder.
- In addition, Tilak also wrote an article justifying the killing of Afzal Khan by Shivaji. The Anglo-Indian press bitterly criticised the British government for not taking action against Tilak.
- Tilak was arrested and tried for sedition before the Bombay High Court. Ironically, the lawyer who secured him bail, Dinshaw Davar, became the judge who would pass a savage sentence on him 10 years later.
- He sentenced Tilak to 18 months' imprisonment. While the Anglo-Indian press gloated over his conviction, the ruling was criticised in England.
- The partition of Bengal and the killing of two English women by a bomb hurled by Khudiram Bose led to large-scale repression. The Anglo-Indian press attacked Tilak for provoking the youth to engage in violent protests. Once again, Tilak wrote several articles in Kesari and asked the government to stop repressing freedom.
- This second trial was once again a mere formality. Tilak argued his own case. He pointed out that the English translation of his articles had serious errors and asked for a correct version, but this plea was rejected.
- What was regrettable was that the jury consisted of seven Englishmen/Anglo-Indians and two Indians who eventually dissented. Davar accepted the majority verdict and sentenced Tilak to six years imprisonment.
- His articles, according to Davar, were seething with sedition and approved the committing of murder with bombs. He concluded that Tilak's journalism was a curse for India.
- Tilak was sent to Mandalay jail in Burma and returned in 1914. Justice Davar's judgment came in for much criticism. Davar's verdict was also criticised by several newspapers in England except for The Times, which welcomed it.
- Tilak's imprisonment by invoking the law of sedition failed to suppress the freedom struggle. The two trials teach us useful lessons in dealing with public protests. A wise government would do well to ascertain the opposite viewpoint and have the grace to correct its path wherever necessary. Suppressing widespread dissent or criticism has always proved counterproductive.



The breeding ground of India's independence movement had had enough manure of mass movements and was fertile now to plant seeds of freedom. In the context of the Quit India movement, analyze.

KEY POINTS

What led to the Quit India Movement?

- In 1939, the Congress passed a resolution, which stated that Indian soldiers should not be sent to the war without people's consultation.
- In March 1942, the British sent a delegation to India named 'Cripps mission' which was failed to address the key demands of the Indians, including their right to form self-government.
- The failure of 'Cripps mission' was one of the key factors contributing towards Gandhi's decision to call for Quit India Movement.
- Another cause of the movement was Gandhi's fear of a possible Japanese invasion of India and the inability of Britishers to defend the India during such a situation.

Planting seeds of freedom

- The movement was carried forward without the leadership of Mahatma Gandhi, or any other leader, all of whom were jailed on its commencement.
- The movement was a direct confrontation with British government, unlike other movements.
- British's ideological hegemony was exposed to elite class of Indian population like Civil servants, lawyers, military officers etc forcing the Britian to provide independence to the country. All sections of people participated in huge numbers and they were united.
- Decentralized command was the prime significance of this movement. The British began to seriously think about the issue of Indian independence after seeing the upsurge among the masses.
- It changed the nature of political negotiations with British empire in 1940s which ultimately paved the way of India's independence.

Gifted in several fields, Rabindranath Tagore made a strong contribution towards India's freedom movement. Elaborate

KEY POINTS

Various contributions

- During partition of Bengal, Rabindranath Tagore wrote the song Banglar Mati Banglar Jol (Soil of Bengal, Water of Bengal) to unite the Bengali population. He started the Rakhi Utsav where people from Hindu and Muslim communities tied colourful threads on each other's wrists. In 1911, the two parts of Bengal were reunited.
- He wrote most of his pieces in his mother tongue. He used his literature as mobilization for political and social reform, hence allowing other nations to be aware and further apply international pressure to Britain to be accountable for its actions. He documented everything that would expose Britain's true intentions in India.
- On receiving the news about Jallianwala Bagh, he tried to arrange a protest in Calcutta (now Kolkata) and finally denounced the knighthood as an act of protest.
- As one of the earliest educators to think in terms of the **global village**, Rabindranath Tagore's educational model has a unique sensitivity and aptness for education within multi-racial, multi-lingual and multi-cultural situations, amidst conditions of acknowledged economic discrepancy and political imbalance.



- He felt that a curriculum should revolve organically around nature with classes held in the open air under the trees to provide for a spontaneous appreciation of the fluidity of the plant and animal kingdoms, and seasonal changes.

An emotionally integrated India offers the best defense against both internal and external threats and challenges. In the context of the freedom struggle, analyse.

KEY POINTS

- India's independence was not just about the end of colonial British rule. It was also bringing down curtains on the dark age of about 1,000 years that began with the invasion of Mahmud Ghazni in 1001.
- During this long dark period, India lost its soul and inner strength. The people began to rediscover themselves as British colonial exploitation became evident. The freedom struggle brought the people together in the quest to shape their own destiny.
- Assertive nationalists like Lala Lajpat Rai, Bal Gangadhar Tilak and Bipin Chandra Pal believed in bold action. Revolutionaries like Khudiram Bose, Chandrasekhar Azad, and Bhagat Singh took to armed resistance. Netaji Subhash Chandra Bose revived the INA and sought Japanese help to evict the British from India
- Though territorially not integrated, the people had been in different kingdoms and provinces over the centuries, they were bound by shared cultural norms and values. Temples were key instruments of such cultural homogeneity.
- The Quit India movement was the most defining moment of our freedom struggle. The Quit India Resolution adopted on August 8, 1942, stressed that "...the immediate ending of British rule in India is an urgent necessity for both the sake of India and for the success of the United Nations. The continuation of that rule is degrading and enfeebling India making her progressively less capable of defending herself and contributing to the cause of world freedom."
- Fearing a Japanese invasion from the east and under pressure from the allies to gain the support of Indians for the war efforts, the Cripps Mission was sent to India. But it failed as it fell short of the demand for immediate independence for the country.
- The humiliating experiences of the last millennium should guide us. The first lesson is — united we stand, divided we fall. We need to knit an India based on the principles of democratic-righteous governance that upholds equality of all and equal opportunities for all.
- We need to empower every Indian with the necessary tools to realise his or her fullest potential. A strong sense of Indianness that supersedes all other identities and a deep commitment to national interest should guide our actions.
- As we move closer to celebrate the 75 years of our independence, our motto should be — perform or perish. This applies to all individuals and institutions. Realise your strength, build on them and create a united, prosperous India.



2. GEOGRAPHY

What is mean by sea-level rise? Discuss the threats possessed by sea level rise and suggest some ways to mitigate it.

KEY POINTS

The researchers note that sea-level rise (SLR) is a “well accepted” consequence of climate change. Their study has found that globally, of the 68 per cent area that is prone to coastal flooding, over 32 per cent can be attributed to regional SLR.

WHAT IS REGIONAL SLR?

- Because sea level rise is not uniform across the world, there is a need to differentiate regional SLR from the global rates.
- For instance, the gravitational pull of the polar ice sheets has different effects on sea levels in different parts of the world, which means regional SLR can be higher or lower than the global SLR.
- Relatively too, regional SLR can be higher or lower. SLR in places such as Scotland, Iceland and Alaska could be significantly less than the regional SLR for eastern US.
- Their results indicate by the year 2100, for most of the world, flooding incidents that are typically associated with a 1 in a 100-year event could occur as frequently as 1 in 10 years, “primarily as a result of sea level rise.”
- As per this assessment, 0.5-0.7 per cent of the world’s land area is at a risk of episodic coastal flooding by 2100, impacting 2.5-4.1 per cent of the population, assuming there are no coastal defenses or adaptation measures in place.

How much of a threat is sea level rise?

- Indonesia’s announced that the country’s capital would be relocated from Jakarta to the province of East Kalimantan on the lesser populated island of Borneo.
- The relocation was meant to reduce the burden on Jakarta, which has been facing problems such as poor quality air and traffic gridlocks, and is particularly prone to flooding.
- The situation looks grim for India’s financial capital Mumbai as well. As per some projections, climate change is expected to inundate significant sections of Mumbai by 2050, impacting millions of people.
- IPCC projections too maintain that SLR is going to accelerate further and faster in the coming years. Some of the expected impacts of SLR over the course of the century include habitat contraction, loss of functionality and biodiversity and lateral and inland migration.

What are some ways of protecting against sea level rise?

- Indonesia’s government launched a coastal development project called a Giant Sea Wall or “Giant Garuda” (Garuda is the name of a bird from Hindu mythology and is Indonesia’s national symbol) in 2014 meant to protect the city from floods.
- The idea involved construction of two dams of a combined length of 637 km to protect Northern Europe against “unstoppable” SLR.
- They also identified other regions such as the Persian Gulf, the Mediterranean Sea, the Baltic Sea, the Irish Sea, and the Red Sea that could benefit from similar mega enclosures.
- A Special Report on the Ocean and Cryosphere in a Changing Climate, published last year by the IPCC, noted that “well-designed coastal protection” could both “reduce expected damages” and “be cost efficient for urban and densely populated... areas”.



Jammu and Kashmir have the potential to generate about 20,000 MW of hydropower, creating countless jobs and numerous avenues for skill development. Elaborate

KEY POINTS

- When the Kishanganga Hydroelectric Plant (330 MW) in Bandipora district was dedicated to the nation by Prime Minister, not many would have imagined the benefits it would bring to Jammu & Kashmir in just over a year.
- Apart from providing power and channelising water for irrigation, projects like Kishanganga have brought other benefits such as access to healthcare at minimal costs, imparting new skills or even local area development like sprucing up parks, roads connectivity, or even helping the kids in project vicinity with online classrooms. Over and above, new jobs on offer to the youth in the valley cannot be ignored.
- In fact, the peaking demand in Jammu & Kashmir was recently reported to be at 3,400 MW, which constitutes just 1.8% of the national aggregate. And the actual shortages were brought down substantially after the new projects were realised on the ground.
- Infusing much required liquidity at Rs 4,580 crore via project financing by the PFC (Power Finance Corporation) and the REC (Rural Electrification Corporation) under Atmanirbhar Bharat is under way. This would hasten new projects under implementation.
- Jammu & Kashmir has the potential to generate about 20,000 MW of hydropower (11,283 MW in Chenab basin, 3,084 MW in Jhelum, 500 MW in Ravi and 1,608 MW in Indus). Once the entire power potential is exploited, Jammu & Kashmir can be turned into a net energy exporter.
- Efforts in this direction seem to have been made with the Pakul hydroelectric power project (1,000 MW) being executed on fast-track basis. Yet another project in Chenab valley, Kiru hydroelectric power project (624 MW), also seems to be in advanced stages of implementation.
- The report of the Alok Kumar-led panel to ensure round-the-clock power availability in both the UTs needs to be quickly implemented. If industry, agriculture and household consumption demand are to be met, a fool-proof plan needs to be rolled out.
- As a first step, reeking power infrastructure needs to be overhauled. A beginning seems to have been made to replace wooden poles and barbed wire conductors by investing Rs 90.09 crore, the approval for which has already been given by the Union Ministry of Power.
- The power sector ecosystem is undergoing marked transformation with most central power utilities and finance companies pumping in funds towards community infrastructure development and providing non-commercial services.

GS PAPER II**3. INDIAN POLITY**

Members of Legislative Assembly and political parties have become adept at using and bypassing the anti-defection law. Analyse

KEY POINTS

- The Rajasthan High Court's stay on defection proceedings drew criticism for being contrary to previous Supreme Court decisions. In Manipur, there has been criticism of the Speaker's handling of defection proceedings.



- The anti-defection law is supposed to deter MLAs from defecting from their political parties. They can lose their seats in the legislature for defying their party. And if declared a defector, they cannot become a minister in a government for six months.
- Six Congress MLAs defied their party's whip by absenting themselves from the confidence vote in the Manipur assembly. Their absence led to the government surviving the confidence motion, contrary to their party's stand.
- After that, they resigned from the legislature neatly sidestepping being labelled a defector under the law. If they win a by-election to the assembly, there will be no bar for them to become a minister.
- Political parties who are at the heart of our politics have no liability under the law. They benefit from defections and are often accused of enticing MLAs of rival parties to switch loyalties. Other enactments responsible for the cleansing of our politics face a similar problem.
- There are limits on electoral spending by a candidate. But these limits apply only to candidates. Political parties can spend an unlimited amount on behalf of their candidates. Individuals convicted with a prison term of over two years cannot stand for elections. But there is no restriction on political parties to give tickets to individuals who face criminal charges which are pending before courts.
- Political issues require political solutions. So far, we have taken a legalistic approach to addressing the problem of defection. Political parties seek protection of the anti-defection provisions when aggrieved and undermine them when it is convenient.
- In Rajasthan, after the patch up, it is unlikely that there will be any interest in discussing the fundamental issues around defection before the High Court. Therefore, it is time that political parties stopped using the crutches of the anti-defection law to fix problems related to their internal democracy, dissent and discipline.

Do you think that the Committee for Reforms in Criminal Law locks subjugated groups out of the consultation process? Comment

KEY POINTS

- The Ministry of Home Affairs (MHA) constituted the Committee for Reforms in Criminal Law to undo the "colonial foundations of our criminal law". The precise mandate of the Committee has not been put into the public domain, but it is apparent that the Committee aims to recommend an overhaul of the Indian criminal justice system.
- If the aim is to decolonise the law, by disabling democratic deliberation, the Committee has set itself up for failure from its very inception.
- The pandemic has wrought havoc on people's lives and livelihoods. With several marginalised groups struggling to secure even rudimentary healthcare, education and employment, it is inconceivable that they could participate meaningfully in a reform exercise of this scale at this moment in time.
- Finally, there appears to be no representation on the Committee from subaltern caste, gender, sexual, or religious groups. As far as we can tell, there is no representation from working class or disabled communities.
- Oppressed communities across India are over-policed and under-protected. Religious minorities as well as the impoverished Dalit and Adivasi communities bear the brunt of criminal laws through police violence, long periods of undertrial detention, harsh punishments and poor legal representation.
- Women, transgender people, and sexual minorities, who overwhelmingly experience gender-based violence, are frequently let down by the criminal justice system. The Committee's composition and operation render democratic participation from these groups impossible.

Deliberative democracy

- A deliberative vision of democracy requires that all members of society are able to participate in collective decision-making, and that decision-making takes place through reasoned deliberation. It recognises that



participation in political processes is hindered by structural inequalities produced by interlocking systems of oppression, including caste, patriarchy, disablism and communalism.

- As a response to these hierarchies, deliberative democracy requires that everyone participates in decision-making by giving reasons for why they prefer a particular course of action. This reasoning must be made publicly available for others to contest. Where political decision-making takes place in an open and transparent manner, oppressed groups can influence it through the strength of their reasons.
- This can mitigate the extent to which a lack of economic, social or political power will otherwise compromise their participation. An inclusive, transparent and meaningful public consultation process for law-making is one practical way to implement a deliberative version of democracy.

4. JUDICIARY

Online dispute resolution provides the opportunity to give more people access to justice and ease the burden on the courts. Comment

KEY POINTS

- Given the worrying situation in terms of pendency and time taken for resolution of disputes, the pandemic has led to introspection and an immediate pivot to fast-tracking innovation led by technology.
- The Supreme Court has been exemplary in adjusting and showing a progressive vision that is flexible. Efficient justice delivery will require the intervention of technology and a two-pronged approach towards dispute avoidance and dispute resolution.

Out-of-court resolution

- For dispute avoidance and containment, ODR has the potential to be both transformative and disruptive in helping reduce matters coming up before the courts, as well as in resolution.
- ODR has the potential to help solve small and medium disputes at scale before they even come before the formal court processes. ODR traces its antecedents to leading practices from alternative dispute resolution (ADR), harmonising them with the latest technology. In today's age of data-driven solutions and machine learning, ODR has the potential to be much more than just replicating existing processes of ADR online.
- For the common man, ODR at the district level could be the ease of living nudge that ensures efficient and affordable access to justice, through remote processes.
- Similarly, ease of doing business could be stimulated through ODR mechanisms that ensure timely resolution in large numbers. Progressive and disruptive changes in justice delivery are vital cogs that can alter the course of access to justice in an unprecedented way.
- Recently, an e-Lok Adalat was live streamed in Chhattisgarh, hearing 3,000 matters over 200 Benches across districts in the State. Other courts, too, are said to be contemplating this integration of technology to make justice delivery more affordable and convenient.

Innovative mechanism

- India is leading the way in innovative justice delivery through initiatives led by the e-Courts project, whose impact will percolate both vertically and laterally.
- Given the extent of what is expected to be a major increase in claims and conflicts, ODR as a technology-led affordable solution is needed to help take matters outside the court.
- Through technology, positive intent and active implementation, ODR could be a vital cog in the bid to make life simpler for every person who seeks access to justice.



5. GOVERNMENT POLICIES

A focused review of various regulations impinging the MSME sector could help enable reduction of regulatory cholesterol and make it globally competitive. Elaborate

KEY POINTS

- MSMEs are the backbone of the Indian economy. Numbering over 45 million, they provide employment to 150-180 million people, contributing to 30% of GDP and 40% of exports.
- Some of the challenges emanate from antiquated infrastructure, low productivity, inadequate liquidity, lack of IT skills and scientific inventory control, digital marketing, social media usage, etc.
- This opportunity should be used for bold and rapid structural modernisation of MSMEs, to attain Atmanirbhar Bharat. There is a need to upgrade skills in tune with the call of PM Modi—skill, reskill and upskill.
- New-age digital techniques will also help MSMEs raise finances smoothly. Fin-techs conduct loan evaluation quicker with documents digitally uploaded by loan-seekers. Applications are also customer-friendly, not needing long paper-based forms with numerous documents.
- The entire Indian e-commerce ecosystem and linked MSMEs are now poised to undergo a revolution with global players like Amazon, Flipkart, and now, Reliance-Jio supported by tech-behemoths Facebook and Google, each wooing suppliers and customers with global experience, best practices and technology.
- The role and potential of Indian MSMEs along with the need to improve their efficiency, productivity and quality needs to be viewed in the context of a globally competitive landscape of their peers in Vietnam, Thailand, Myanmar, etc.
- Keeping in view the need to speedily rejuvenate our MSMEs, a separate matrix could be evolved for Ease of Doing Business (EoDB) specifically designed for them. Their offerings, be it product or services, are different, the scale of operations and needs are different, regulatory barriers faced are different, and so are the “Doing Business” needs.
- While the Business Reforms Action Plan (BRAP), a joint exercise by the DPIIT and the World Bank, has brought spectacular results where India’s global ranking has gone up from 141st to 63rd. Such a focused exercise state-wise, even district-wise, based on the identified parameters for MSMEs could bring in dramatic results.
- This multiplicity in taxation may lead to increased compliance burden and blocking of working capital, with a manifold increase in the cost of doing business across the entire supply chain of the supplier, wholesaler/trader and seller, and also adversely impact the ease of doing business for MSMEs.

A major rationalisation of subsidies can finance development of eastern India as well as protect it from external aggression. Explain

KEY POINTS

- Substantial increase in defence expenditure over the next 5-10 years seems inevitable if India is to match the Chinese military might. With limited resources, that is going to be a daunting task.
- The average Indian household size. It was 4.8 at an all-India level as per 2011 Census, almost same as what China had in 1971. Uttar Pradesh had the largest family size (6.0); Bihar, at 5.5, came next, followed by Jharkhand (5.3)—all above the India average, and a lot higher than China’s family size of just 3.03 in 2017.



- The bottom line is that the economic reforms India launched in 1991, with changes in trade and industrial policies, had only limited success in these states of eastern India as their family sizes are large, while agricultural holding size is extremely small.
- The only way out for India, therefore, is a massive education drive, especially of female children, with liberal scholarships for the girl child. That brings me back to the question of overall resources.
- The New Education Policy, approved by the Cabinet recently, talks of raising the overall expenditure on education as a percentage of GDP, but is almost silent on education about population control and from where the resources will come.
- The Pradhan Mantri Garib Kalyan Rojgar Yojana, focusing on providing 125 days employment to migrant workers in 116 districts, is commendable as a short-term relief.
- It provides `50,000 crore, spread over 25 activities drawn from various ongoing schemes. But, there is no medium- to long-term plan for massive infusion of development funds for the laggard states of Bihar, Uttar Pradesh, Jharkhand, Madhya Pradesh, Chhattisgarh, Odisha, West Bengal and Assam as well as the northeastern states.
- India needs a package for the eastern belt, to the tune of at least Rs 15 lakh crore over the next 3-5 years, to improve basic infrastructure of health, education (including population control), housing, roads, power, water, etc. It is this sustained investment plan that will create jobs and development. It has to be steered by public expenditure. Private sector can also be roped in through CSR in well-designed schemes.
- One way to finance such a mega-investment plan is to control the culture of doles. There are massive subsidies on food, fertilisers, and power, and in funding recurrent losses of several public enterprises both at the Centre and the states.

Agricultural markets in India require spatial and temporal integration for better price discovery for farmers. Explain

KEY POINTS

- Prime Minister launched the Rs 1 lakh crore Agriculture Infrastructure Fund (AIF) to be used over the next four years. This fund will be used to build post-harvest storage and processing facilities, largely anchored at the Farmer Producer Organisations (FPOs), but can also be availed by individual entrepreneurs.
- The fund will also be used to provide loans, at concessional rates, to FPOs and other entrepreneurs through primary agriculture credit societies (PACs). NABARD will steer this initiative in association with the Ministry of Agriculture and Farmers Welfare.
- Changes in the legal framework are a necessary condition, though not a sufficient one, for getting agri-markets right. Creating post-harvest physical infrastructure is as important as the changes in the legal framework. The AIF will help fill this gap.
- There is no doubt that more and better storage facilities can help farmers avoid distress selling immediately after the harvest, when prices are generally at their lowest. But small farmers cannot hold stocks for long as they have urgent cash needs to meet family expenditures.
- Therefore, the value of the storage facilities at the FPO level could be enhanced by a negotiable warehouse receipt system: FPOs can give an advance to farmers, say 75-80 per cent of the value of their produce at the current market price.
- A vibrant futures market is a standard way of hedging risks in a market economy. Several countries — be it China or the US — have agri-futures markets that are multiple times the size of those in India.
- Government agencies dabbling in commodity markets — the Food Corporation of India (FCI), National Agricultural Cooperative Marketing Federation of India (NAFED), State Trading Corporation (STC) — should increase their participation in agri-futures. That is how China deepened its agri-futures markets.

- The banks that give loans to FPOs and traders should also participate in commodity futures as “re-insurers” of sorts for the healthy growth of agri-markets. Finally, government policy has to be more stable and market friendly.
- The bottom line is that India needs to not only spatially integrate its agri-markets (one nation, one market) but also integrate them temporally – spot and futures markets have to converge. Only then will Indian farmers realise the best price for their produce and hedge market risks.

As the COVID exposes underinvestment in cities, India needs to rethink its approach for an inclusive resilient future. Elaborate

KEY POINTS

- About two-thirds of India’s cases are in Mumbai, Delhi and Chennai. Their population density makes the spread of the virus difficult to control. That’s why the COVID-19 crisis demands our thinking about Indian cities in particular.
- Coupled with dense living conditions, this makes self-isolation and hand-washing very difficult. In short, access to clean piped water will make or break the best laid plans for tackling COVID-19.
- That’s why the government must prioritise the basic needs of the most vulnerable, including improving drinking water and sanitation services. The FICCI Water Mission is focused on the reuse of waste water and grey water which deserves much attention as we look to conserve scarce resources.
- It’s time to rethink food and nutrition. Food insecurity is rapidly intensifying. India is home to 15.1 per cent of the world’s undernourished population, causing informal workers to face impossible choices between risking contracting the virus or losing their income, housing and sustenance.
- The pandemic has also highlighted the need to decongest slums to protect people’s health and wellbeing. The Swachh Bharat Mission (SBM) has been one of our strongest tools to fight the corona virus.
- The India Sanitation Coalition continues its work reinforcing Swachh behaviour like washing hands regularly, not spitting in public places, managing waste safely, and most of all, always using a toilet – these are critical for the hygiene and health of our citizens.
- Ever since the first phase of “Unlock”, SBM and Jal Jeevan Mission construction work has begun in full swing and has generated employment under the Garib Kalyan Rozgar Yojana for many migrant workers who have gone back to their villages.
- We know that thriving cities make prosperous countries: Investments in low-carbon measures in cities would be worth at least \$23.9 trillion globally by 2050. We must find the courage and the vision to seize this moment for what it is – an opportunity to reset; to rethink our governance models for cities.

Discuss the initiatives which can ensure sustainable growth of the dairy sector as well as boost incomes of millions of small and marginal dairy farmers.

KEY POINTS

- The Rational Balancing Programme was designed to be a large-scale demonstration of the benefits of balanced feeding to dairy animals.
- The RBP was the critical component of the World Bank-supported National Dairy Plan (NDP) Phase I (during 2011-12 to 2018-19) in 18 major milk-producing states.
- One of the key focus of the NDP-I was to increase the productivity of milch animals and thereby increase milk production to meet the rapidly-growing demand for milk.
- Prior to the implementation of the NDP- I, most of the feed-related interventions in India were limited to the supply of compound cattle feed and mineral mixture only. This led to lower productivity of animals as against their genetic potential, higher cost of production, late onset of puberty, etc.



- Farmers also used to feed their animals based on traditional knowledge and information passed through generations. They fed their animals with the crop-residues, locally available concentrate, ingredients such as bran, oil-cakes, grains, etc, and seasonally-available green fodders.
- The National Dairy Development Board (NDDB) developed a software-Information Network for Animal Productivity and Health (INAPH)-through which ration of dairy animals could be balanced. Taking into consideration regional variations, nutrient masters were created for different categories of dairy animals, and district-wise feed libraries were developed.
- After completion of NDP I, the RBP is being implemented by nine states at present. The RBP was successful in reaching out to 2.1 million farmers.
- To reach more farmers, the NDDB has developed the Pashu Seva App that can be used to optimise feeding costs and manage common diseases.
- The app also notifies farmers about due dates for de-worming and booster vaccination, artificial insemination and pregnancy check. The Pashu Seva app is freely downloadable for dairy farmers, and would soon be available in Hindi as well as many regional languages.

6. GOVERNANCE

It is necessary for the country to have a national movement for quality self-reliance. Do you agree with this view? Comment

KEY POINTS

- Self-reliance is directly connected to quality. It is widely accepted that the developed nations are able to dominate global markets because of their innovative products and their quality.
- It is clear that the prime minister wants India to produce goods of a quality that not only reduces our dependence on imported goods, but also makes them well sought after globally while placing India amongst the foremost exporters of the world.
- Quality pertains not only to industrial goods but rather to every walk of life because all activities in society are interlinked. We can realise the dream of self-reliance only when we bring quality to every facet of life
- Lack of demand has the maximum impact on farmers. They only get the minimum support price in respect of a limited number of crops. An adequate price for their other crops is directly dependent on demand and demand is led by the people's buying power or the income they spend in the market.
- India has tremendous opportunity in handicrafts and Ayurvedic products. These products will have to deal with challenges in terms of quality, branding and marketing. Agriculture is India's most traditional and fundamental sector.
- Indian products will face stiff competition from those already in the market. So, be it agriculture or any other sector, if we want to make ourselves strong to face the competition, we have to manufacture top quality goods at competitive prices. The answer to every challenge is quality.
- It is a similar story with the pharma sector. Though India is a major producer of drugs, it mostly imports API (active pharmaceutical ingredient). Indian companies have immense opportunities in this sector.
- It is clear that if India wants to be truly self-reliant, then it needs to make the pursuit of quality part of our DNA. The prosperous classes of Indian society will have to lead the quest for quality. They can bring about a change by using their earnings to increase incomes of their employees.



7. HEALTH

Digi-health is the future, only this can help India to handle pandemic and non-pandemic situations.

Elaborate

KEY POINTS

- With just 0.6 doctors per 1,000 population and 2.2 nurses, as compared to the WHO's norm of 1 and 3, respectively, India simply cannot cope with the demands made by its citizens even in non-pandemic situations.
- Fixing this requires large investments in doctors and nurses and even physical infrastructure like hospital beds; according to a number put out by Tata Group, India needs 600,000 more doctors and 2.5 million nurses; around two-thirds of doctors.
- With the increasing use of AI, machines can deliver a lot more and even help in diagnostics; a CT scanner with information on lakhs of patients may be able to offer better diagnostics than a trained radiologist.
- Doctors sitting in cities can remotely look after more patients with relatively less experienced medical personnel helping out at the ground level; indeed, with greater care being offered in primary care facilities, there will be less pressure on secondary and tertiary facilities.
- Kerala has been the only state to embark on digitisation of health records, whereas others have put the plan on the back-burner. But, it now appears, the prime minister is expected to announce it on the Independence Day. The programme shall entail digitisation of health records, creation of a registry for doctors, patients and medical facilities.
- The government also plans to introduce telemedicine and e-pharmacy, but at a later stage. And, while there are some existing programmes already—5C in Karnataka is working with some district hospitals to provide teleradiology services, and Janitri is helping provide neo-natal care in Rajasthan—these need to be brought under a single umbrella and, in fact, linked to Aadhaar and DigiLocker;
- So, a person getting radiology or blood report can receive it in their locker and then can share it with the doctor or hospital. A digitisation exercise, had helped get 55% more patients getting treated in primary care centres, a 50% increase in doctor availability, etc.

To become a dependable manufacturer of high-quality medical devices and the second global factory of the same, India needs to bring in quality culture. Explain

KEY POINTS

- During Covid-19, India faced hurdles in weeding out substandard medical products flooding the markets. Quality checking institutions report to different ministries and act in silos; they have assigned roles and do not have a holistic outlook, being limited by their domains.
- The Bureau of Indian Standards (BIS) runs a voluntary standard compliance scheme of ISI mark and reports to the Department of Consumer Affairs; the Quality Council of India (QCI) has independent boards of NABH (hospital accreditation), NABCB (accreditation of certification bodies), NABL (labs) and NABET (education), and the QCI and its boards report through the DPIIT to the commerce and industry minister. The BIS is headed by an IAS officer, a generalist, as is the case with the QCI.
- Armed forces, the DRDO, the Indian Institute of Science or IITs have some great infrastructure, but industry is not clear who has what and if access is possible for commercial third-party testing and if these are accredited and have value and international acceptance.
- For the success of Make-in-India, we need a quality mindset of vertical product standards, horizontal standards and common product family standards, specifications, voluntary standards setting, and at times safer regulatory controls and demonstration of compliance to standards with the help of test labs.



- Assigning a common quality leader backed by a think tank to advise and coordinate all these national institutions, not only for the healthcare sector, but also across the entire engineering and consumer products sectors, will give a boost to Make-in-India.
- It will also give a fillip to the Atmanirbhar Bharat vision of the Prime Minister by having world-class manufacturing facilities for not only medical devices, but also for maintaining global standards in quality, supplying quality products to the Indian consumers, as well as for the value-added profitable export markets.
- Amidst the Covid-19 pandemic and growing Indo-China tensions, India has to address every issue linked to national security and become globally competitive. Healthcare being the most critical, as it exposes the chinks in national health security.
- India has to evolve imaginative policies and usher in reforms that will accelerate its economic revival. Developing our own quality goods is the best way forward. Competitiveness is not only demonstrated by price, but also by quality and the value delivered.

The National Digital Health Mission can transform medical care in the country if it respects data privacy rights. Explain

KEY POINTS

- The National Digital Health Mission (NDHM) announced by the Prime Minister on Independence Day has the potential to transform the healthcare sector, making it more technologically advanced, inclusive and delivery-driven.
- The move to use technology to streamline processes such as medical record-keeping, sharing of healthcare data, appointments and similar healthcare processes to help citizens make informed decisions on treatments, is well-timed. T
- he NDHM envisages creating a national health ID for every Indian, an idea mooted by the NITI Aayog in 2018 when it recommended creating a centralised system to manage healthcare in the country.
- The NDHM is supposed to cover all government health programmes to begin with. This will be a huge exercise, akin to the Aadhaar project, and would require more resources than the currently allocated ₹ 144 crore, making private participation a necessity given the strained finances of the Centre.
- Although the NDHM is now a voluntary exercise, like the Aadhaar was at the outset, it could become mandatory for availing government health services. In such a context, ensuring the safety of individual health data becomes paramount.
- The government must gain the confidence of all stakeholders, including rights groups, before going ahead. Insurance companies should not be allowed to misuse personal data. The NDHM must also be in compliance with the global best practices on data privacy, such as the EU's General Data Protection Regulation.
- Such centralised data, combined with real-time Big Data analytics, can become a surveillance tool. Considering the way healthcare data from wearable devices are getting mainstreamed, with healthcare providers, doctors and patients using them for diagnosis, if not for treatment, the NDHM should spell out its stand on collecting such data from individuals and integrating it with the unique health ID.

Eat Right India campaign forges collaboration between the agriculture, health, industry, and environment ministries over the respective food-related issues. Explain

KEY POINTS

- India has a high burden of food-borne disease, the double burden of malnutrition, and high levels of micronutrient deficiency, the latter equally prevalent amongst rich and poor. It is hence remarkable that an Indian programme, Eat Right Initiative, by FSSAI has been recognised among the top-ten for the Food System Vision Prize by the US-based Rockefeller Foundation.



- Eat Right India, a pan-India movement, has driven initiatives and awareness on healthier diets. The vision was to provide safe and wholesome food, delivered through a judicious mix of regulatory changes, capacity building initiatives and availability of collaborative tools.
- Eat Right India is based on three pillars—safe food, healthy diet and sustainable diet. It worked on the vision of ‘if it’s not safe, it’s not food’; ‘food should not only serve the palate, but is meant for body and mind’, and ‘food has to be good both for people and planet’. It is a collective effort to ensure universal access to safe food, healthy and sustainable diets.
- Each of these pillars had five concrete actions. Safe Food focussed on personal & overall hygiene, hygienic & sanitary practices through the supply chain, combatting adulteration, reducing toxins & contaminants, and, finally, controlling food hazards in processing and manufacturing.
- These helped improve the safety and quality of food, and inspired public trust in food available commonly or through the government programmes. It also encourages a strong culture of self-compliance with a view to promote ease of doing business. It also seeks to have certification of clean street food hubs, fruit and vegetable markets, hygiene rating of halwai shops, meat shops and safety of food served in religious places.
- Eat Right India is perfectly poised to win everywhere. It is people, gender, region and status agnostic. It forges a collaboration between the agriculture, health, industry, and environment ministries over respective food-related mandates, building a ‘whole government’ approach.
- It also builds on synergies of programmes like Ayushman Bharat, Swachh Bharat Abhiyan, Poshan Abhiyaan and Fit India to institutionalise preventive healthcare as a way of life. This approach underpins FSSAI’s role as an ‘enabler and reformer’, apart from being an ‘enforcer’—to build a positive, collaborative and inclusive environment, for unlocking the true potential of the food sector.

It is critical for India to conduct a national survey on food insecurity to assess the impact on food security on the population. Justify

KEY POINTS

- Data from the latest edition of the State of Food Security and Nutrition in the World (SOFI) report show that India retains the dubious distinction of being the country with the largest population of food insecure people.
- Estimates presented in the report which was released by several United Nations organisations show that the prevalence of food insecurity increased by 3.8 percentage points in India between 2014 and 2019.
- The report provides three-year average estimates of the number of food insecure people for South Asia as a whole and for South Asia (excluding India). By taking a difference between the two, one can derive the estimates for India.
- These estimates show that while 27.8% of India’s population suffered from moderate or severe food insecurity in 2014-16, the proportion rose to 31.6% in 2017-19. India accounted for 22% of the global burden of food insecurity, the highest for any country, in 2017-19.
- India has not released the latest National Sample Survey Office (NSSO) consumption expenditure survey data for 2017-18. As a result, conventional measures of poverty and food consumption are not available for recent years.
- Because of a lack of regular availability of consumption survey data from most countries, the FAO uses supply-wise data on per capita food availability to measure changes in average per capita calorie intake.
- The latest PLFS data have shown that the unemployment rates in the recent years have been higher than in the last four decades. It is widely believed that demonetisation and introduction of the Goods and Services Tax were two prime causes of economic distress during this period.
- A sudden imposition of an unprecedented and prolonged lockdown in the wake of the COVID-19 pandemic has brought renewed focus on the problems of hunger and food insecurity.



- With a sudden loss of livelihoods, a vast majority of India's poor are faced with increased food insecurity, hunger and starvation. A number of starvation deaths have also been reported in the media.
- It is critical for India to conduct a national survey on food insecurity to assess the impact of the COVID-19 pandemic on food security of different sections of the population.

Community-level institutions can ensure that the burden of malnutrition is not aggravated during the pandemic. Explain

KEY POINTS

- As per, "The State of the World's Children 2019, UNICEF", before the COVID-19 outbreak, malnutrition was the cause of 69 per cent of the total deaths of children under five years. India was home to nearly half of the world's "wasted" (low weight for height ratio) children.
- The report also highlighted that only 42 per cent of infants in the age group of six to 23 months were fed at adequate intervals, and only 21 per cent received an adequately diverse diet.
- The most recent nutrition strategy adopted by the Odisha government is "SOPAN"- Strategy for Odisha's Pathway to Accelerated Nutrition. Implemented by the Women and Child Development and Mission Shakti Department, SOPAN has shown promise in achieving the state's nutrition targets across 22 districts.
- Community-based crèches have been established for improved health management of children under three years. These crèches provide community-based management of SAM (CMAM), supervised feeding and counselling for mothers and children with moderate acute malnutrition.
- However, there is much scope for improvement in such state-level interventions. For instance, SAM management is driven by the Health department in some states and the department of Women and Child Development in others.
- This indicates a lack of ownership in addressing malnutrition at the governance level. Uniformity in the implementation framework at all levels needs to be adopted stringently to build an administrative will to address the burden of malnutrition. The Union Ministry of Women and Child Development has drafted guidelines for Community-Based Management of Severe Acute Malnutrition (CMAM) which will be finalised after consultations with all States.
- Given the dire situation of our nutrition indicators and the resource-crunch brought on by the pandemic, the best way forward would be to minimise the burden of malnutrition cases on hospitals by resolving less severe cases at the community level by engaging the frontline workforce such as anganwadi workers and institutions like the Nutrition Rehabilitation Centres (NRCs) at the community level efficiently.

8. INTERNATIONAL RELATIONS

Standing up for Arab sovereignty and opposing the forces of regional destabilization must be at the very heart of India's new engagement with the Middle East. Comment

KEY POINTS

- Pakistan has been angry with UAE's invitation to India to address the Organisation of Islamic Cooperation in early 2019 and the reluctance of Saudi Arabia to convene a meeting to condemn Indian actions in Kashmir.
- Pakistan's foreign minister threatened earlier this month to convene a meeting of foreign ministers of Islamic nations, outside of the OIC, to attack India's Kashmir policy.
- Both Turkey and Iran now intervene with impunity in the internal affairs of the Arab world. Two other states have joined this Great Game. Arab Qatar, which is locked in a fraternal fight with the Saudis and the Emiratis, wants to carve out an outsized role for itself in the Middle East.



- In the interim, the threat to align with Turkey and Iran serves as an instrument to put pressure on the Saudis and Emiratis. Delhi must go back to the deepest source of regional policy — unflinching support for Arab sovereignty. That, in turn, expresses itself in five principles.
- First, resist the temptation of telling the Arabs what is good for them. Support their efforts to reconcile with non-Arab neighbours, including Israel, Turkey and Iran.
- Second, oppose foreign interventions in the Arab world. In the past, those came from the West and Israel. Most Arabs see the greatest threat to their security from Turkish and Iranian interventions.
- Extend support to Arab economic integration, intra-Arab political reconciliation and the strengthening of regional institutions.
- Recognise that India's geopolitical interests are in close alignment with those in the moderate Arab Centre — including Egypt, Jordan, Saudi Arabia, the UAE and Oman.
- India can't be passive amidst the unfolding geopolitical realignment in West Asia. Some members of the incipient alliance Turkey, Malaysia and China have been the most vocal in challenging India's territorial sovereignty in Kashmir.

A sustained and graded economic response to the recent Chinese conduct on the border is required for an amicable settlement. Analyse

KEY POINTS

- While diplomatic efforts continue to restore the status quo ante and military deployments have been strengthened to act as a deterrent, the use of military power to get them to move back is a depleting option.
- The bottom line that needs to become clear to China has to be that without a mutually satisfactory border settlement and a permanent end to these border incidents, it cannot be business as usual and the Indian market would start shrinking for them. The Chinese have competitive advantage and are integral to global supply chains.
- The initial focus should be on items which are still being made in India and where imports from China have been increasing. If the RBI were to undo the real exchange rate appreciation, it would be equivalent to an increase in import duties of about 10 per cent.
- Further, selective imposition of China-specific safeguard duties and use of non-tariff trade barriers should be enough in segments like electrical appliances to let Indian producers expand production and increase market share.
- The government should also facilitate the flow of finances for expansion and provide technical support for testing, improving quality and lowering costs of production. In critical areas where we are dependent on China for inputs, such as Active Pharmaceutical Ingredients, we need a vigorous approach to procure from elsewhere and have early production in India.
- The government could provide support for environmental compliance to bring down costs of production. This would create demand for domestic goods and services. The deindustrialisation that trade with China has been causing would get reversed. It would help in the recovery from the COVID-induced recession.
- Then there are critical products like solar panels and grid storage batteries. In these areas, private investment for manufacturing in India would be triggered by assured government procurement at a commercially viable price with full value-addition in India for five years from commencement of production.
- The bid process should provide for provision of land, infrastructure and cheap electricity to lower the cost of production. Repeated bids would create a competitive industrial structure. An early transition towards self-reliance would take place.



GS PAPER III

9. INDIAN ECONOMY

India needs to craft a strategy to reverse the lockdown- induced severe industrial slowdown.

Discuss

KEY POINTS

- India needs to craft a strategy on how to reverse the lockdown-induced severe industrial slowdown. We need new policy instruments that steer market forces to deliver desired outcomes of creating jobs and achieving self-reliance in our open market economy.
- India, till the economic reforms of 1991, pursued self-reliance through infant industry protection, a strategy not very different from that of East Asian nations.
- One material difference which led to such disappointing results was that industrial licensing reduced competition in the domestic market.
- The East Asian nations, on the other hand, created competitive industry structures. The other material difference was the push to firms to export to Western markets. Success in global markets needed competitive prices and acceptable quality.
- On public sector enterprises, there has been ambivalence. Aggressive privatisation was what reformers have wanted, but the political leadership has been cautious. Strengthening these enterprises has not been seriously attempted.
- Continuing real exchange rate appreciation, high real interest rates, an asset price bubble in land, higher energy costs, regulatory risk and uncertainty, and an unskilled workforce with labour market rigidities have all been contributing to the lack of competitiveness.

Revamping policy

- Designing policy packages for a few key industries would be challenging. Labour-intensive sectors must get priority. Providing an interest subsidy to the textile industry is a good example where results have been below expectation.
- Capital subsidies given to ship-building have had, similarly, a modest impact. Raising import duties for many items is now under consideration.
- Concessional rates for leasing land, provision of cheaper energy, and public investment for common facilities of training, testing and waste management should all be options on the table.
- Selective government equity investments in areas where the risk perception is too high, as in the case of chip manufacturing, may be the only way to get such investment.
- Spending scarce fiscal resources or getting the consumer to pay more would be worthwhile only if a major breakthrough is the target. A sub-optimal effort is avoidable.
- This needs better closed-door and transparent dialogue with industry to put together an attractive package that should trigger private investment. An end date for the support package also needs to be settled at the outset so that after success, scarce resources can move on to some other sectors.



Do you think that the center's reliance on indirect tax revenue, has deprived the government of resources during the COVID crisis? Comment

KEY POINTS

- The taxation policy of the Indian government has been problematic on two grounds. Not only has it been pro-rich (and anti-poor), but it has deprived the state of important fiscal resources — both particularly damaging in the context of the COVID crisis.
- Another example is the imposition of fresh cesses such as the Swachh Bharat cess and Krishi Kalyan cess in addition to GST. The permanent nature of these cesses has been widely opposed by the states and criticised by the CAG, who has pointed out the lack of transparency and incomplete reporting in accounts on the utilisation of amounts collected under cesses.
- This happened at the cost of relaxing the lockdown and weakening social distancing measures. The Centre made a similar move by increasing the duty on fuel by a record Rs 10 per litre on petrol when global crude prices have been falling — another move that was neither pro-poor nor favourable for demand but speaks of the government's increased dependency on indirect tax-based revenues.
- To address the issue, a group of income tax officers suggested higher taxes on the super-rich, alongside a COVID relief cess of 4 per cent for all those earning above Rs 10 lakh. However, the report was rejected by the Centre and some of the officers were punished for their audacity.
- Higher taxes on the super-rich could be used for cash transfers and a fiscal stimulus, that, in India, at 1 per cent of GDP each, have been negligible so far. Though India surpassed its comparable neighbours on the lockdown stringency measures, it has still not released significant relief measures to compensate for the economic disruption caused by the lockdown. So far, the government has not fully used its fiscal instruments.
- Deferring tax payments, with continued late fees and penalties on filing extensions and slashing corporate taxes is not the appropriate approach towards reviving the economy. With the Centre's fiscal deficit reaching nearly 5 per cent of the GDP, and tax revenues likely to remain subdued over the next two years, the government needs to do more.
- A wealth tax, a COVID-19 cess on the super-rich and a surcharge on the super-rich for their income from listed equity shares are critical for mitigating the current situation. Such measures would also play a key role in reducing both income and social inequalities.
- COVID-19 may be a blessing in disguise if it allows India to reform its tax system in order to make it work towards inclusive growth and sustainable development rather than targeting only investment-led economic growth. After all, India's tax-GDP ratio was only 10.9 per cent in 2019, as against the OECD average of 34 per cent.

The government need to fundamentally reform labour markets to attract people to cities and create economic opportunities in rural India. Discuss

KEY POINTS

- Over 85 per cent of employment in India is in the informal sector. An unplanned national lockdown halted economic activity and wiped out livelihoods, especially of informal workers.
- The Centre for Monitoring the Indian Economy (CMIE) estimates that between mid-March and mid-April, 120 million people lost their jobs, with unemployment rising to an all-time high of 27 per cent. Left with nothing, we saw reverse migration on an unprecedented scale — some 10 million people abandoned cities to return to their native villages. For a while, our media was full of discussion of the need to address some of our most chronic social problems.
- Labour regulation must start with a clear-eyed recognition of facts: We have stringent labour laws to protect workers, but this covers only the formal sector — under 15 per cent of employment.



- Living conditions in our cities is the second challenge. For too long, we have been content to drive by slums where some of the people who clean our homes, deliver our goods, and repair our equipment live in squalor.
- Reverse migration is also an opportunity to collaborate in spreading the geography of development. We have long had policies aimed at getting firms to invest in less-developed districts and the current government has an ambitious goal of doubling farmer's incomes.
- But the gap between the richest (urban) and poorest (rural) districts in the country still keeps growing. We need a three-pronged approach: First, the easiest way to grow farmer incomes is by having them grow more value-added crops.
- Fruits and vegetables have great export potential, and exports must be consistently encouraged and not switched on and off as domestic prices change. And the cultivation of palm plantations has the potential for huge import substitution, we need corporate farming as the gestation period of seven years for the first crop is too much for the average farmer to handle.
- We need to encourage agro-processing near the source. Fostering entrepreneurship in rural and semi-urban areas would combine nicely with local processing. And third, we need to invest even more massively in rural connectivity. Today, we would add digital connectivity to road connectivity to level the playing field for all regardless of where they live.

India needs a National Competition Policy for better growth in a free market economy. Comment

KEY POINTS

- There is an urgent need for deeper and long-term economic reforms which can, inter alia, enhance competitiveness by eliminating distortionary market practices to usher economic growth across sectors.
- India has failed to introduce a culture of fair competition in our markets, an essential ingredient for the success of a free-market economy.
- The 1991 reforms introduced the concept of “free markets” to India. They were aimed to gear up the economy to face competition from within as well as outside. This brought competition into the Indian markets, and the benefits, both in terms of faster economic growth and consumer welfare, are clearly visible.
- It is time for India to have a National National Competition Policy (NCP). Competition policy refers to “those government measures that directly affect the behaviour of enterprises and the structure of industry” to maximise total welfare, i.e., the total of consumer's surplus and producer's surplus, as well as taxes collected by the government.
- However, to be effective in a democracy, such policies should have the cover of the law. The Competition Act, 2002 (Act) which replaced the archaic MRTP Act, 1969 already exists to provide the statutory cover for the NCP.
- Control of anti-competitive agreements and prevention of abuse of dominant positions by large enterprises, regulation of combinations and competition advocacy are broad thrust areas under the Act.
- Similarly, public procurement, which constitutes approximately 20-30% of our GDP, continues to be infested with cartelisation. NCP will ensure each policy regulation and law is screened based on impact, if any, on the state of competition. However, this requires a strong political will.
- Recently announced initiatives to introduce limited privatisation of Indian Railways for select routes for passenger train services indicates growing realisation of the importance of introducing competition in the public sector.



Fiscal Council is an important institution needed to complement the rule-based fiscal policy in the country. Explain

KEY POINTS

- The fiscal deficit of the Centre in 2019-20 as estimated by the Controller General of Accounts (CGA) was 4.6%, 0.8 percentage point higher than the revised estimate.
- The practice of repeated postponement of targets, timely non-settlement of bill payments and off Budget financing to show lower deficits has been common. The report of the Comptroller and Auditor General (CAG) of India in 2018 on the compliance of the Fiscal Responsibility and Budget Management (FRBM) Act for 2016-17, highlights various obfuscations done to keep the liabilities hidden.
- The FRBM Review Committee made a recommendation underlining the need for an independent review by the Finance Ministry appointing the Council.
- A Fiscal Council is an independent fiscal institution (IFI) with a mandate to promote stable and sustainable public finances. These institutions assist in calibrating sustainable fiscal policy by making an objective and scientific analysis.
- The OECD (2013) has documented the important principles needed for successful fiscal councils under nine broad heads and these are: local ownership; independence and non-partisanship; mandate; resources; relationship with legislature; access to information; transparency; communication and external evaluation.
- These principles are important, ensure autonomy, being unbiased, transparency, and effective and accountable Councils.
- In Belgium, the government is legally required to adopt the macroeconomic forecasts of the Federal Planning Bureau and this has significantly helped to reduce bias in these estimates.
- Fiscal Council is an important institution needed to complement the rule-based fiscal policy. Of course, it is not a 'silver bullet'; if there is no political will, the institution would be less effective, and if there is political will, there is no need for such an institution.
- That is also true of the FRBM Act. While we cannot state that the FRBM Act has been an unqualified success, it has also not been an abject failure either.
- The counterfactual will show that things would have been much worse without it, and it has helped to raise the awareness of government, legislators and the public at large. Similarly, the Fiscal Council will help in improving comprehensiveness, transparency and accountability.

In bridging the GST gap, the Centre ought to help States through the Consolidated Fund of India. Elaborate

KEY POINTS

The Goods and Services Tax (GST) regime was built on the promise that if States faced revenue deficits after the GST's introduction, the Centre would make good the loss in the first five years.

Assurances made

- When the government introduced the GST compensation cess, many States pointed out that proceeds from the cess may be inadequate to fund the losses faced by States after the rollout of GST. Allaying these apprehensions, the central government made the assurance that it would provide funds to meet States' deficits.
- This was reinforced in the eight meeting of the Council. In the tenth meeting, the Secretary of the GST Council stated that the central government could raise resources by other means for compensation and this could then be recouped by continuing the cess beyond five years.



- States never expected to be disappointed so early. The central government has let them down by thrusting on them two options, both of which involve borrowing by States. This is akin to asking States to mortgage their future to sustain the present. Cooperative federalism has been transformed into coercive federalism.

Centre is best placed

- The central government has the ability to raise resources through means that are not available to States. Monetary measures are the monopoly of the central government. Even borrowing is more efficient and less expensive if it is undertaken by the Central government.
- Over the last six years, the Centre has continually cornered resources that should have been shared with States. The Fourteenth Finance Commission allotted 42% of central government tax revenues to States. However, Accountability Initiative's analysis of State Budgets shows that States received only 30% of central tax collections during the 2015-19 period.

Equal representatives

- As equal representatives of the citizens of the federal republic of India, State governments expected the Centre to demonstrate empathy when they are bearing the brunt of the COVID-19 pandemic and lockdowns that were announced without consultation. This is the most appropriate time to provide them relief through the Consolidated Fund of India.
- Prime Minister proudly described GST as a 'Good and Simple Tax' which would usher in a glorious economic future for India. Unfortunately, just three years later, the harsh reality is that States are staring at 'grave and sordid times' ahead.

10. INFRASTRUCTURE

The introduction of Public-Private Partnership in Railways can lead to the kind of reforms that can help transform India and make it a global leader. Explain

KEY POINTS

- Spanning an extraordinary 68,000 route km, the Indian Railways is truly the pulse of the nation. It employs over 1.2 mn people and generates approximately Rs 2 lakh cr annually—a major contributor to jobs, GDP, and mobility. In fact, efficient and optimal use of the railways could further add up to 1% to GDP.
- However, to undertake an operation of such gargantuan proportions, India must involve the best resources via PPP to bring in the latest technology, leading practices, and efficiencies.
- The recent opening of PPP opportunities by Indian Railways is a clear indicator that a reform-driven agenda is being implemented. It is a controlled foray into PPP, where market forces will help enhance the quality of services and in-transit experience, without the government relinquishing control over public safety and security.
- Journey time will be, within a range of 10%, like the fastest Indian Railways train on that path. Proposed routes include Delhi–Mumbai, Delhi–Chennai, Mumbai–Chennai, and others. This is a follow up of last year's launch of the IRCTC-run Tejas Express, and the Kashi Mahakal Express.
- The PPP investment is expected to be in the range of Rs 30,000 cr in a Make in India-led growth strategy. Encouraging domestic manufacturing of rolling stock, these projects will also create direct and indirect employment.
- Another key initiative is the redevelopment of railway stations through a PPP model, remaining cost-neutral to Indian Railways. Initially, 50 stations will be bid out and funded through land monetisation as well as user charges.



- The modernisation and redevelopment of stations will be conducted primarily through Indian Railway Stations Development Corporation Limited, Rail Land Development Authority and other central government entities.
- The PPP basis is under the Design, Build, Finance, Operate and Transfer model. The land lease period has increased to 99 years for residential development around the railway stations as part of the project, and commercial development to 60 years.
- To add to the viability of this project, all clearances will be single-window, and plans will be approved in consultation with urban local bodies and authorities to ensure a collaborative exercise.

11. AGRICULTURE

What accounts for the rise in the consumption of groundnut in the country, especially in the Saurashtra region? Explain

KEY POINTS

- One example of “consumer-facing”, as opposed to “institution-consumed”, oils faring well in lockdown/unlockdown India is groundnut.
- In Gujarat especially, people had to switch entirely to eating at home and they chose groundnut oil, which is their traditional cooking medium.

Behind the comeback

- One reason, of course, is prices expected to remain firm, supported by rising home consumption of the oil post-Covid and steady export demand for the kernels.
- In Saurashtra, where the major groundnut-cultivating districts are Rajkot, Junagadh, Jamnagar and Devbhoomi Dwarka, the competing crop is basically cotton.
- Saurashtra farmers this time have sown just 14.87 lh area under cotton, as against the 16.50 lh under groundnut. The latter has clearly gained at the former’s expense.
- For farmers, groundnut can be harvested in 90-110 days by October-November, whereas a full cotton crop cycle can take up to 180 days over 3-4 pickings. The shorter duration gives the flexibility to plant wheat, chana (chickpea), jeera (cumin) or coriander during the rabi winter-spring season.
- Not only are groundnut cultivation costs lower, their stems are very good fodder for cattle and buffaloes. Yields per hectare, at 10-20 quintals, are more or less similar both for kapas (raw un-ginned cotton) and groundnut-in-shell. Yields of the fibre crop have actually fallen in the last 5-6 years due to repeated pink bollworm attacks.
- Gujarat is, incidentally, also the country’s largest cotton producer. But procurement of kapas through the Cotton Corporation of India hasn’t been on the scale of groundnut purchases undertaken by Nafed.

Primary agricultural credit society needs to be propped up for better agricultural development in the country. Examine

KEY POINTS

- Primary Agricultural Credit Society is the first building block of the century-old cooperative banking system of India.
- Each PACS was designed to be a village-level credit society into which the farmers brought in share capital, deposits and provided loans to each other.



- Elected members, one-member-one-vote, transparency, ground-level reach, ease of operations, speed, human connect almost everything about the structure of a PACS makes for robust 'public policy for credit'. Yet, PACS have run into many problems too.

Multipurpose societies for multiple reasons

- The year 2020 has become a war-zone of sorts. The recent amendments in critical Acts are a response to the new reality and work towards opening up the market for the Indian farmer.
- These amendments reinforce the role PACS can play in bringing farmer communities closer to credit, inputs, market and value addition. The AIF, set up for establishing decentralised farm gate infrastructure, holds huge promise for a nation which still loses 15% of its food grains due to poor post-harvest management (PHM) facilities and lack of farm-gate storage.
- The recent decision by NABARD to develop 35,000 PACS into MSCs in mission-mode is a step in this direction. The initiative will enable PACS to support farmers in post-harvest marketing activities and provide ancillary services to its members like creation of storage and processing facilities, custom hiring centers and collective purchase of inputs.
- Though such services are being provided by the cooperatives in a sporadic way, this intervention will help in structuring these services in a sustained and scalable manner, covering a much larger number of PACS. This will also help in increasing non-fund based income of the PACS. On the sidelines, a PACS can also play a major role by integrating its warehouse with physical and financial supply chain of agro-commodities in the upcoming Gramin Agriculture Markets (GrAMs) or large warehouses in private sector.
- No commercial bank branch can ever come close to providing the kind of services a PACS can, and, that within itself shows just why PACS need to be propped up.
- Surely, the short-term cooperative credit eco-system with over 15,000 branches and over 95,000 PACS. Helping them turn into multi-service societies may just as well be the last chance we have of giving them this chance.

The agriculture sector needs to be re-mandated as an economic activity that has to generate jobs and incomes while meeting the food and nutrition security of the country. Explain

KEY POINTS

The processing sector in India still veers around food processing, and there is minuscule production of high-value products like chemicals from ethanol. The country imports most such products including proteins, starch, enzymes, adhesives, agar, biochemical, etc. India's food processing industry (FPI) is relatively at a nascent stage, and currently processes less than 10% of its agri-produce

Growing from primary to secondary agriculture—options

- The way forward to secondary agriculture is to strengthen food processing and then graduate to non-food processing for bio-materials, biochemical and fuel.
- The country needs to drive three alternate entrepreneurial modes so as to harvest the potential, and not necessarily in a sequence. These include (1) cottage & village-level industries with low level of capital & technology, to meet near-market demand of processed food & non-food items; (2) micro, small & medium scale enterprises (MSME) that are fed raw materials after aggregation from the fragmented fields; and (3) high-end processing that deploys intensive technology and capital, and manufacture specialised products like bio-based industrial enzymes, chemicals, fuel, etc.
- Infrastructure includes the generic needs of road, transport, electricity and digital facilities. Hereunder, stable supply of electricity remains a concern in rural areas, where industry is best placed in close proximity to the production hinterlands, from the perspective of cost efficiency.

- The Ministry of Food Processing Industries may, therefore, be authorised to cover even non-food processing industries in addition to food processing. It, in a way, becomes the Ministry of Agro-Processing as exists in some states, and drives the country's bio-economy.
- **Cottage and village level:** In synch with Mahatma Gandhi's philosophy of rural industrialisation, India has promoted khadi and village industries. The agriculture sector, with diverse raw materials, provides ample scope for this. The Committee on Doubling Farmers' Income has laid great stress on secondary agriculture and defines it as a productive activity that (1) utilises both primary & by-products raised on the farms and in the neighbourhood; and (2) deploys locally-available manpower after skilling them to operate and manage the production of goods & services.
- The National Commission on Agriculture, in its 1976 report, estimated the requirement of beehive colonies at 155 million, and the count in existence is around 4.6 million.

In sum

- The agriculture sector needs to be re-mandated as an economic activity that has to generate jobs and incomes, while meeting the food and nutrition security of the country. This can be realised by adopting secondary agriculture as it can create value, deliver value and capture value, which describe the basic tenets of any business.

There is a need to reconsider Pradhan Mantri Fasal Bima Yojana since many states in the country are opting out of it. Comment

KEY POINTS

- Five years after its inception in 2016-17, the Pradhan Mantri Fasal Bima Yojana (PMFBY) has run into rough weather. If farmers are dissatisfied with both the level of compensation and delays in settlement, insurance companies have shown no interest in bidding for clusters that are prone to crop loss.
- States (Bihar, West Bengal and Andhra Pradesh, Telangana, Jharkhand and now Gujarat) are opting out of the scheme and launching their own versions. They are unable to deal with a situation where insurance companies compensate farmers less than the premium they have collected from them and the Centre.
- In Maharashtra's Beed cluster, farmers are up against the State government and insurance companies for not settling earlier claims, while the latter have decided to stay out of bids for this region for the current season.
- The task ahead is to sweeten the deal for farmers and insurance companies. Madhya Pradesh is struggling to find insurers for its 11 clusters, having reportedly finalised just five so far .
- Insurance companies should bid for a cluster for about three years, so that they get a better chance to handle both good and bad years. The bids should be closed before the onset of the kharif/rabi season.
- If the farmer is not enthused by crop insurance despite the 95-98 per cent subsidy on premium, it means that the product per se needs improvement.
- Farmers deserve a better choice of insurance products to meet the specifics of each crop or region. For this, insurance companies should be offered more freedom to operate.
- For now, the Beed 'model', where a company assumes liability only up to 110 per cent of the premium collected or shares gains in a good year with the State government, can emerge as a way out of the current mess.



12. ENERGY

The generating capacity through renewable sources should be fully supported along with the associated costs by the government. Examine

KEY POINTS

- Generation from renewables is intermittent in nature since unexpected cloud cover, or sudden fall in wind velocity will lead to an immediate dip in generation. In order to maintain the stability of the grid, we need to rely on other resources to counterbalance the drop, which can be done best by hydro-based generation, and in the absence of hydro, through gas-based generation.
- The problem, as far as India is concerned, is that we have not been able to make substantial additions to our hydro capacity during the last decade or so due to a variety of problems; for gas, there is practically no spare domestic availability. One can, of course, import gas, but the price of gas is volatile.
- In this situation, we are forced to balance the grid through our coal-based plants. Consequently, with our target of 175 GW of renewables by 2022 (and also 450 GW by probably 2030), the coal-based plants at certain times of the day will operate at below the technical minimum.
- The important point to note is that we do not have any credible estimate of the 'balancing cost' for the country as a whole. However, in a study done in CEA in December 2017, it was estimated that in the case of Tamil Nadu, this cost would be Rs 1.57 per unit spread over the renewable generation.
- The corresponding figure for Gujarat was estimated at Rs 1.45 per unit. This cost would include, amongst others, the impact of deviation settlement, the impact of having to back down and extra transmission charge. This cost, if added to the cost of generation from renewables, will give a completely different story vis-à-vis cost of generation from coal-based plants.
- The second aspect that we ignore is the cost of recycling the solar waste once its life is over. Cost of recycling, however, will come down in the future when the waste can be commercially extracted.
- As of now, even internationally, only glass, aluminium and copper can be extracted from the waste commercially. It is estimated that the cost of recycling can vary from \$250 to \$600 per tonne, which is far more than the value of the recycled material. In addition, there will be transportation cost which can range from 60% to 100% of the recycling cost.
- To conclude, while addition to generating capacity through renewables should be fully supported, the associated costs should be estimated and paid for. While the cost of recycling is easy to calculate and can be easily added in the tariff up front, accounting for 'balancing cost' can be complicated. So let's get our arithmetic right when it comes to comparing the generation cost of renewables vis-à-vis coal.

13. S & T

Unified Payments Interface is a world-class payments system, which can anchor a broader suite of fintech applications and drive India's digital growth. Analyse

KEY POINTS

- In a recent address to leaders of the US-India Business Council, Indian prime minister highlighted the growth and gaps in India's digital economy. Doubling the size of Digital India requires bridging this divide and expanding access to the tools and platforms that power India's digital economy today.
- Rapidly scaling UPI is the need of the hour and one of the best ways to strengthen India's digital economy. Today people can send money to their ageing parents isolated during this time of physical distancing. Migrant workers can support their families. Farmers can make sales outside of the market.



- In fact, NPCI has also set a goal to grow UPI to 500 million users by 2022, which if achieved, would be a true gamechanger for Digital India. We are eager to contribute to this effort by launching payments on WhatsApp across India and help power a new wave of fintech innovation and financial inclusion.
- The UPI infrastructure was built for scale and reaching hundreds of millions of people without the risk of any one company grabbing an unfair share. Given the limited number of people who are able to send money to friends and loved ones even today, it is imperative more tech companies are able to leverage the power of UPI to expand the digital ecosystem to accelerate financial inclusion.
- Indeed, UPI is a world-class payments system, that can also anchor a broader suite of fintech applications like micro-pensions, digital insurance products, and flexible loans which WhatsApp can facilitate.
- These powerful tools can build on the extraordinary success India has made in lifting millions of people out of poverty and build resilience to future economic shocks. Covid-19 has only underscored the importance of these tools, which will serve as critical lifelines for small and micro-enterprises and individuals as they look to recover from the pandemic.
- While the world grapples with Covid-19, India continues to stride forward. We see a nation that is determined to meet its moment and the unique needs of all of its citizens. With courage, ambition, and boundless potential, India can emerge from this pandemic stronger than ever before—a leading democratic digital powerhouse that will lead the world through the 21st century.

An Internet ombudsman with experts in various fields can be an effective antidote to unregulated technological disruptions. Comment.

KEY POINTS

Governments and private companies are using the Internet as ‘a means of control and surveillance, extending from cases of fraud detection, storage and exchange of criminal and financial records to those of political surveillance and control’.

‘Control’ and also data theft

- On the privacy front, even after the Supreme Court of India had declared privacy as a fundamental right, the government insisted on affidavit in the top court that informational privacy or data privacy cannot be a fundamental right.
- The Aadhar Act diluted the notion of ‘privacy’ and the standard of proportionality test set up by the Supreme Court. In an ongoing dilemma, even the ‘Aarogya Setu’ app is battling to satisfy the conscience of privacy overseers. The clear impression is that the government is more interested in ‘control’ than ‘protection’ of data.
- India’s cybersecurity watchdog, CERT-In, last year reported huge data theft of Facebook and Twitter users by malicious third party apps. Reportedly, more than 1.3 million credit and debit card details from Indian banks and the data of 6.8 million users from an Indian health-care website were stolen in the same year.

Private firms and elections

- Private data analytics companies have emerged to exploit the electoral process with the sole objective of customising political messaging. While the customisation of political messaging is not *per se* illegal, it certainly is unlawful to indulge in unauthorised data mining and collection by the industry.
- The present legal framework leaves these menaces outside the ambit of election laws as they were framed in a time and space that was primitive when compared to contemporary technological advancements.

Regulation and independence

- Should there be a gatekeeper to balance appetites for technology, security and privacy? The answer is yes, so long as the gate keeper is for regulation, not surveillance, and so long as it is completely and genuinely independent.



- Far-reaching exemptions, in large measure swallowing the rule, have been carved out where personal data can be processed. Section 35, which provides the government with unfettered access to personal data, negates the three tests of legality, necessity and proportionality given by the Supreme Court in *Justice K.S. Puttaswamy (Retd.) vs Union Of India*.
- The Bill also allows State and private parties to process personal data without obtaining consent and such broad exemptions would not only open the floodgates for misuse but also reduce India's prospects of entering into bilateral arrangements for law enforcement access.
- Only an Internet ombudsman with experts on cyber and Internet laws, IT, data management, data science, data security, public administration and national security, and consciously involving eminent sections of civil society, can be an effective antidote to unregulated technological disruptions.

It is time for Indian manufacturing companies to develop unique dynamic capabilities that can propel it to global leadership positions in the Industry 4.0 era. Examine

KEY POINTS

- While production units and investment-linked performance initiatives are a good start, India should use this opportunity to link incentives to the adoption of modern manufacturing practices, including those that are today at the heart of Industry 4.0. This will help Indian manufacturing be globally competitive in the long-term.
- Industry 4.0 began as a national strategic initiative from the German government through the Ministry of Education and Research and the Ministry for Economic Affairs and Energy about a decade ago.

Dynamic technologies

- Industry 4.0 conjures up visions of robot factories sans humans, and technologies like augmented and virtual reality (AR/VR) to remotely control production lines.
- Before focussing on these cool technologies, Indian manufacturing companies will do well to get the foundational technologies in place. These include the Internet of Things (IoT), high-speed data communications, the cloud, and data analytics including, those that leverage artificial intelligence and machine learning.
- The traditional outside-in perspective of strategy based on product-market fit is inadequate in the current context and companies need to focus on the inside-out dynamic capabilities like combining digital technologies that power Industry 4.0, functional and organisational processes, and industry domain-specific requirements to power superior performance.

Innovative work practices

- India is now the pharmacy of the world. Imagine a pharmaceutical company that has the contract to manufacture a vaccine for Covid-19 for both domestic and exporting markets.
- One solution is for drug control authorities to generate unique numbers securely and in real-time, and transmit them to the printing and packaging machines on the vaccine assembly line. These unique numbers are printed on each vial. This process is entirely automated and there is no human in the loop.

Upskilling professionals

- All this is possible only when companies have a cadre of professionals that is capable of nurturing these dynamic capabilities to synthesise solutions that generate superior performance.
- India also has a large cadre of professionals who are well versed in all aspects of digital technology. This cadre is being upskilled on the latest digital technologies that are useful in the Industry 4.0 context.



A globally-competitive tech-solutions/application ecosystem can't be sustained without government partnership. In the context of India, analyse.

KEY POINTS

- The government finally announced the winner of its video-conferencing app challenge. Vconsol, by Techgentsia, a start-up from Kerala, won the competition; the app focuses on security and uses OTP as an authentication method for login.
- Over the last few months, following a rigorous process, it narrowed the list down to 12 participants, giving each R 10-12 lakh for app development.
- Finally some companies will be listed on the government's GeM portal so that government bodies can get into contracts with them for video-conferencing solutions.
- Such hackathons are not a new approach; the government, via NITI Aayog and other agencies, has been conducting similar challenges to rope in private players to build apps. However, the scope for continued engagement, until now, has been limited.
- The video challenge marks the first step with regards to the government actively promoting Indian apps. The government partnered an international hackathon-organising forum for 'Hack the crisis' in April, to encourage tech-solutions for addressing different aspects of the Covid-19 pandemic, and has announced a line-up of hackathons.
- While this is welcome, more proactive support from the government is needed, via the kind of engagement the GeM listing for the video-conferencing apps represents. Also, such solutions should not be just crisis-response or a knee-jerk reaction.
- The government needs to help build start-ups in the field of health-tech, agri-tech, ed-tech, etc. It also needs to promote innovations in new technologies like artificial intelligence, machine learning, blockchain, mixed reality, and robotics.
- Some states have started incorporating such solutions for better governance. Agra partnered with the start-up Gaia and Microsoft to create a corona dashboard for the city, and Mumbai did the same, too; many governments and city administrations purchased drones from Garuda, a Chennai-based company, to sanitise large areas.
- Apart from providing initial capital and facilitating incubation programmes—these have been going on for long now—governments at all levels need to hire start-ups through contracts for faster or better government-service delivery. A globally-competitive tech-solutions/app ecosystem can't be sustained without government partnership.

Discuss the challenges present in India's contribution to the International Thermonuclear Experimental Reactor project.

KEY POINTS

- India is helping 'Make the Sun on Earth' at the ITER Fusion Energy Reactor, but being penny-wise and pound-foolish may hurt the country in the long run.
- It is being built in southern France and is named 'The Way', otherwise technically called the International Thermonuclear Experimental Reactor (ITER).

Challenges

- The trouble is on many fronts, including India's financial commitments to the allocation of human resources by India at the French construction site. In addition, for some unknown reasons at the recent high profile global virtual event, India deputed a rather junior person to represent the country in comparison to heads of states by other nations. Let's examine some of these challenges in greater detail.



- To make the ITER reactor, India is contributing two kinds of resources, the first is 'in-kind' material that is manufactured by the Indian industry and supplied for the making of the reactor. This is a major contribution, and till date, India has not erred on this part. Most recently, the largest components of the ITER reactor, the Cryostat (the giant vacuum vessel), has been supplied by India. It was made in Gujarat by L&T and shipped to France; it weighs over 3,800 tonnes.
- The other is the 'in-cash' contribution, it is here that India has majorly defaulted. Bernard Bigot, the director general of ITER, says, "Since 2017, India has not fulfilled its in-cash contribution"; as a consequence, other member states were 'very unhappy' with India. The outstanding amount is now to the tune of Rs 1,000 crore.
- The other more worrying problem in India's involvement with ITER is the dismal allocation of human resources by India at the ITER site. As per the agreement, each participating country can provide up to 10% of staff. So, as per the quota, India can send about 100 of its engineers and scientists to work as staff at ITER.
- According to ITER records, only 25 Indians are currently working there. To have full staff strength is important, as the young Indian engineers can learn the complexities of this million piece jigsaw puzzle that is being put together. While India will no doubt have full access to drawings and blueprints, but Indians who have worked on the site say the best learning comes by dirtying one's own hands.
- India's bureaucracy needs to make an exception, and the 'one size fits all' regulation needs to go if India is to really learn the art and science of making the ITER machine.
- There is a peculiar Indian provision that only personnel who are staff of the department of atomic energy can be deputed to ITER. While the atomic energy establishment in India has a whopping strength of over 75,000, experts say most Indian engineers lack soft skills, and so do not pass the muster.

In addition to space legislation, India also needs to address global governance, regulatory and arms control issues. Explain

KEY POINTS

Space could prove attractive for high-tech manufacturing too. In short, an exciting new platform is opening up for entrepreneurs. However, what is technologically feasible is not easily achievable. The challenges to fulfilling the potential of space are many.

Challenges in fulfilling potential

- As outer space becomes democratised, commercialised and crowded, the multilateral framework for its governance is becoming obsolescent.
- The Outer Space Treaty of 1967 enshrines the idea that space should be "the province of all mankind" and "not subject to national appropriation by claims of sovereignty". The Rescue Agreement, Space Liability Convention, and the Space Registration Convention expanded provisions of the Outer Space Treaty.
- The Moon Treaty of 1979 was not ratified by major space-faring nations. Space law does not have a dispute settlement mechanism, is silent on collisions and debris, and offers insufficient guidance on interference with others' space assets.
- The legal framework is state-centric, placing responsibility on states alone. However, non-state entities are now in the fray for commercial space exploration and utilisation. Some states are providing frameworks for resource recovery through private enterprises based on the notion that this is not expressly forbidden for non-state actors.
- The lack of alignment of domestic and international normative frameworks risks a damaging free-for-all competition for celestial resources involving actors outside the space framework.
- So investment in technologies that can disrupt or destroy space-based capabilities is under way. The space arms race is difficult to curb, especially since almost all space technologies have military applications. For



example, satellite constellations are commercial but governments could acquire their data to monitor military movements.

Need for a space legislation

- Our space assets are crucial for India's development. India's future plans are ambitious. These include a landing on the Moon; the first Indian solar observatory; the first crewed orbital spaceflight mission; and installation of a modular space station in 2030.
- The proposed involvement of private players and the creation of an autonomous body IN-SPACE (Indian National Space Promotion and Authorisation Centre) under the Department of Space for permitting and regulating activities of the private sector are welcome efforts.
- However, the space environment that India faces requires us to go beyond meeting technical milestones. We need a space legislation enabling coherence across technical, legal, commercial, diplomatic and defence goals. Our space vision also needs to address global governance, regulatory and arms control issues.

14. ENVIRONMENT

Rural areas must be encouraged to use LPG, by redesigning the subsidy scheme and highlighting the ill-effects of solid fuels. Examine.

KEY POINTS

- In 2018, India had 22 of the world's 30 most air-polluted cities. Household sources of ambient air pollution, such as cooking and heating, are the single largest contributors in much of the developing world, including India.
- Air pollution levels within households that cook with solid fuels, such as wood and cow-dung, can be high and skyrocket to 40 times the safe limit prescribed by the WHO.
- An important reason for the low usage of LPG as cooking fuel is poverty. Although LPG is subsidised in India, the recurring cost of refills is considerable for poor households and the subsidy design itself is rather complex.
- Anecdotal evidence suggests that many rural households are either unaware of the government's cash-back scheme on LPG purchases or do not comprehend the varying amount of the subsidy they receive.
- This increase took place in the summer, when LPG consumption is typically low due to the greater availability of solid fuels relative to the wet season. These effects appear to be concentrated among poorer and less educated households.
- Households with below median wealth, as well as those with a head who has completed less than primary schooling, increased refill consumption significantly compared to those above median wealth and a primary educated (or more) head.
- From a policy perspective, our results indicate that the LPG subsidy scheme should be redesigned to increase take-up. Households which were informed that the out-of-pocket expenditure is, more or less, fixed at ₹ 500 per refill due to the subsidy internalised the information by marginally increasing refill purchase.
- Since the government absorbs the variation in market price through the cash-back subsidy, depositing the subsidy amount *upfront* into the accounts of beneficiary households could substantively reduce the financial burden on liquidity and credit constrained households.



Do you think that the recently published Environment Impact Assessment draft needs a comprehensive relook? Examine

KEY POINTS

In the controversial Environmental Impact Assessment (EIA) 2020 draft notification, published in March, the Ministry of Environment, Forests, and Climate Change sets out a process (Clause 22: “Dealing of Violations”) for post-hoc legalisation of projects that start construction and/or operation prior to receiving an environmental clearance.

EIA regulatory violations

- In the context of the industrialisation-led economic development model, at the heart of the contestation is the question of what constitutes an appropriate trade-off between industrial development and environmental protection.
- Dealing with projects that fail to obtain prior clearance has been a difficult issue for the regulator, since the project proponents could cite sunk investments if the penalty for violation involves shutting down the project.
- On the other hand, post-hoc legalisation of such violations could lead to perverse incentives for the industry, rendering the entire regulation redundant.

Legalisation process

- Further, according to Clause 22, only the violators themselves or a regulatory or governmental authority can bring the violation to notice. It is not clear from the notification if any other stakeholders, for example interested individuals or civil society organisations, have a legal basis to report violations.

Multi-stakeholder deliberation

- The complexity involved in just one clause highlighted here is an indication of the need for a wider and more meaningful deliberation on the entire draft notification, beyond simply eliciting public comments.
- The report, made available in the public domain, recorded the deliberations of the stakeholder meetings and provided a rationale for its recommendations.
- Researchers argue that such participatory processes are likely to generate greater legitimacy for the regulations, potentially reducing conflict during implementation.
- Combined with research which finds that conflicts arising out of environmental and social issues impose real costs on businesses, it is important that the agencies adopt a more deliberative approach that takes into account various stakeholder views.

The country needs to attain development goals by adhering to environmental regulations. Substantiate

KEY POINTS

- Forecasts of ‘good’ or ‘normal’ monsoons are often beguiling and belie the ominous. This year, the annual floods that upend the Brahmaputra Valley have been followed by intense spells along the Konkan coast and Mumbai, and now Kerala, which until the end of last month recorded a slight deficit.
- The landslip in Idukki, that has so far claimed 43 lives and rendered several homeless, follows from a continuing spell of heavy rains in Kerala. Most districts have received three or four times more rain than what is normal.
- Last year too, neighbouring Wayanad saw multiple hamlets wiped out and the year before, the devastating floods in the State forced a debate on the need for new models of development. Landslips, or landslides, in the Western Ghats have a history.



- As part of a National Landslide Susceptibility Mapping (NLSM) programme, the agency mapped several States in the Western Ghats, North-eastern States, Jammu and Kashmir and Uttarakhand to assess how vulnerable their districts were.
- The objective of the NLSM maps is to help State and district authorities incorporate the risk of landslides into zoning laws. However, just as in the case of earthquake zonation maps, or for that matter, any exercise to scientifically ascertain the risk from natural hazards to a region, these laws are barely implemented in the right spirit.
- And this is not unique to Kerala. The details might vary but it is now beyond contestation that India is living in a new climate normal. Frequent high intensity bursts of rain will co-exist along with long dry spells.
- It has emerged from studies of Kerala's topography that quarrying and the unscientific cutting of slopes into hills aggravates the risk of soil erosion.
- A lack of compliance with such principles is often a key reason why natural hazards end up causing a significant number of avoidable casualties. There is a cost to pursuing development goals without paying attention to environmental constraints.

Discuss the various strategy needed to manage plastic waste comprehensively in the country.

KEY POINTS

- Disposable masks and PPEs, made of plastic (most notably single-use-plastics), have been at the frontline of our fight against COVID-19.
- A gloomy scenario where single-use plastic waste generation to the tune of 400 tonnes, in the form of discarded plastic syringes that may be used if the whole of earth's 7.8 billion population is to be vaccinated against the virus. Till the pandemic took the world by storm, single-use plastics were the obvious villain; maybe not so anymore.
- A three-pronged strategy can bring us closer to pragmatic and effective action — reduce plastic consumption, recycle, and reuse plastic products and waste to the maximum possible extent, and comprehensively manage plastic waste.
- They are light, highly mouldable, waterproof, and can be produced in any colour. But what makes them almost impossible to replace is that they are cheap; more so in market conditions characterised by falling crude prices that enhance their price competitiveness.
- The government may also have to provide support by enabling market access for such products, which if left to their own will face tough competition from cheaper plastic counterparts.
- Recycling and reusing plastic needs to be strengthened to bring back used plastic into the manufacturing cycle. This strategy will achieve the twin goal of reducing entry of virgin plastics into the market, as well as reducing plastic waste burden in waste dumps, landfills, and oceans.
- The recently published Extended Producer Responsibility (EPR) draft notification by the Ministry of Environment Forest and Climate Change can be leveraged for this. Significantly, EPR places the responsibility of product after-use on the manufacturer.
- Finally, it all boils down to effective management of plastic waste that has escaped circularity. Citizens need to help by desisting from littering and diligently segregating waste at source.



What is meant by Critical wildlife habitat? Discuss the challenges present in the declaration of critical wildlife habitat and suggest preventive measures to overcome it.

KEY POINTS

- The COVID-19 pandemic has driven migrant workers back to their villages, including many situated inside or on the fringes of forested areas, including sanctuaries and national parks. It pertains to the declaration of a Critical Wildlife Habitat (CWH), which a PIL in the Bombay High Court seeks to get the department to urgently notify.
- CWH is a provision under the Forest Rights Act, 2006 (FRA). The Act primarily focuses on recognising the historically-denied rights of forest-dwellers to use and manage forests.

Challenges

- The first and biggest illegality is that the process of recognition of rights under the FRA is incomplete. The case of Melghat Wildlife Sanctuary, which has been pursued most vigorously by the FD, is quite revealing.
- A monitoring committee set up by the Tribal Development Department (TDD) – which included some of us – has found that many villages were resettled when they had rights claims pending, others had their claims illegally rejected or incompletely granted, and several had not even applied till this controversy erupted.
- The constitution of the expert committees is faulty. They do not contain expert social scientists familiar with the area. Wildlife enthusiasts are sometimes substituted for experts in life sciences.
- The criteria being used by the committees to determine the threat of “irreversible damage” to wildlife are quite extreme, and are not supported by any consensus even among ecologists. The FRA, in fact, begins by recognising that forest dwellers “are integral to the very survival and sustainability of the forest ecosystem.

Measures

- A careful reading of the CWH provisions in the FRA shows that it is open to both possibilities, as long as they are arrived at through a rigorous and participatory process.
- It requires setting up a multi-disciplinary expert committee, including representatives from local communities. It also requires determining – using “scientific and objective criteria” and consultative processes – whether, and where in the PA, the exercise of forest rights will cause irreversible damage and threaten the existence of important wildlife species.
- It then requires determining whether coexistence is possible through a modified set of rights or management practices. Only if the multi-stakeholder expert committee agrees that co-existence or other reasonable options are not possible, should relocation be taken up, again with informed consent of the concerned gram sabhas.

Bhadbhut project across river Narmada in Bharuch is meant to solve freshwater problems has various repercussions for the environment. Discuss

KEY POINTS

- Bhadbhut project is planned to be a 1.7-km causeway-cum-weir barrage with 90 gates, across the river Narmada, 5 km from Bhadbhut village, and 25 km from the mouth of the river, where it flows into the Gulf of Khambhat.
- The barrage will stop most of the excess water flowing out of the Sardar Sarovar Dam from reaching the sea and thus create a “sweet water lake”.
- The main purpose of the project is to prevent salinity ingress. Due to the reduced flow of fresh water, saline seawater gushes into the Narmada estuary during high tide, thus increasing salinity along the banks.
- The sweet water from the reservoir will aim to meet the residential and industrial water requirements of Bharuch, Ankleshwar and Dahej.



- The barrage is expected to interfere with the migration and breeding cycle of hilsa. A marine fish, hilsa migrate upstream and arrives in the brackish water of the Narmada estuary near Bharuch for spawning usually during the monsoon months of July and August, and continue doing so till November. Once the barrage is built, it is expected to block their natural entry.
- Fishermen in Bhadbhut village told that the hilsa catch between July and September every year has dropped to 10-15 fish a day from the earlier 50-100 a day.
- The barrage will have a fishermen navigation channel that will allow fishermen owning boats and living upstream on the Narmada beyond the barrage to get access to the sea. This channel will be about 10-15 metres wide and will have a gate that can be opened and shut as necessary.
- Part of Aliya Bet, and island in the delta of the Narmada and known for shrimp farming, is likely to get submerged. A portion of the forest in Aliya Bet too will get affected by the project. Most of the Aliya Bet is downstream from the barrage.

Crop rotation and diversity should be promoted to mitigate the environmental effects of growing just rice and wheat. Elaborate

KEY POINTS

- India is the world's second largest producer of both rice and wheat. Cultivated on 45 million hectares in kharif and rabi seasons, rice production has consistently risen over the years from 104.4 million tonnes (mt) in 2015-16 to 117.9 mt in 2019-20.
- Annual hikes in the minimum support price combined with the system of open-ended procurement through the Food Corporation of India (FCI) have contributed not only to increase in harvest size but also burgeoning public stocks of the two fine cereals.
- In the absence of scientific crop rotation, soil health has deteriorated. Encouraged by free power supply, reckless drawing of groundwater for irrigation has resulted in the water table going down to alarmingly low levels.

Mono-cropping

- The practice of grain mono-cropping needs to change. Crop rotation should be enforced. Ideally, legumes should be cultivated to give a break to grain mono-cropping.
- It is not that policy-makers are unaware of the gravity of the situation. But successive governments at the Centre and in the States have been indifferent to crop rotation in Punjab and Haryana.
- Without doubt, we need rice and wheat for our food security; but there are ways to ensure food security without damaging the environment. In regions of grain mono-cropping, crop rotation must be mandated. If not, procurement of rice and wheat in such regions should be limited to the minimum.
- Growers who practice crop rotation should be incentivised with assured purchase by the government. MSP hikes for rice and wheat can be moderated. In its recommendation to the government, the Commission for Agricultural Costs and Prices should take into account the environmental cost associated with grain mono-cropping.
- At the same time, there is a lurking danger that needs to be recognised. Indian wheat is at the limit of heat tolerance. Any unusual rise in day temperature during growing season can hurt wheat yields.
- Therefore, over-dependence on the north-western region for wheat cultivation and procurement should gradually give way to promotion of the fine cereal in other States by building robust procurement infrastructure.
- If a certain political will is necessary for reduction of 300,000 ha of sugarcane cultivation, a far stronger political will alone can bring progressive changes to fine cereals cultivation to ensure reduction in financial and environmental costs from a long-term perspective.



15. DISASTER MANAGEMENT

Discuss the potential risk that can be faced at all times from the possible impact of a major oil spill disasters.

KEY POINTS

- The various types of freshwater and marine habitats that exist in nature have different sensitivities to the harmful effects of oil contamination, as well as different abilities to recuperate.
- For example, freshwater organisms are at risk of being smothered by oil that is carried by the current, or of being slowly poisoned by long-term exposure to oil trapped in shallow water or stream beds. In addition, oil can potentially have catastrophic effects on birds and mammals.
- Many birds and animals also swallow oil and are poisoned when they try to clean themselves or when eating oiled prey.
- Fish and shellfish can also digest oil, which could cause changes in reproduction, growth rates or even death. Commercially important species such as oysters, shrimp, mahi-mahi, grouper, swordfish and tuna also could suffer population declines or become too contaminated to be safely caught and eaten.
- Depending on just where and when a spill happens, from a few up to hundreds or thousands of birds, fish, mammals, reptiles, corals and other animals and plants can be killed or injured.
- Other birds and mammals that live near the coast are more susceptible to poisoning.
- The birds are also often affected by oil slicks, sticking to their feathers and causing death by hypothermia.
- The oil prevents them from flying, many birds also end up drowning. Surviving animals are often disorders of the nervous system, liver and lungs. Not to mention the coral reefs, inhabited by a rich ecosystem, and the collateral victims who ingest their contaminated prey.

Investments in education and health that close gaps between social groups would be essential to build resilience in the face of future pandemic shocks. Analyse

KEY POINTS

Focusing on the looser description of the pandemic as a leveller, preliminary data and early indirect evidence from several parts of the world indicate that the incidence of the disease is not class-neutral: poorer and economically vulnerable populations are more likely to contract the virus as well as to die from it.

Education as factor

- The global evidence suggests that job losses associated with COVID-19 are much more concentrated among individuals with low levels of education and those with vulnerable jobs with no tenure or security. Thus, education did turn out to be a protective factor in the first wave of immediate post-lockdown job losses.
- The current pandemic is further likely to exacerbate these educational differences. Data from another nationally representative survey, the India Human Development Survey for 2011-12 (IHDS-II) show that 51% of SC households have adult women who have zero years of education, i.e. are illiterate, and 27% have an illiterate adult male member. These proportions are in stark contrast to Upper Caste (UC) households, where the corresponding proportions are 11% and 24%, respectively.

Issue of technology

- There are many dimensions that reveal continued disparity between caste groups, which would affect the ability of Dalit and Adivasi families to access online education. For example, the proportion of households with access to the Internet is 20% and 10% for UC and SC households, respectively. Only 49% of SCs have bank savings, as compared to 62% of UC households.



- Thus, differential access to information technology, as well as disparities in the ability to invest in technology will be critical in shaping access to online education, if the pandemic forces schools to close for a substantial period of time.
- Early impacts of the pandemic-induced lockdown indicate that the resultant economic distress is exacerbating pre-existing structures of disadvantage based on social identity, and investments in education and health that close gaps between social groups would be essential to build resilience in the face of future shocks.

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