

GOVERNANCE**1. #FOSS4GOV Innovation Challenge**

Recently, the Ministry of Electronics & IT (MeitY) has announced #FOSS4GOV Innovation Challenge to accelerate adoption of Free and Open Source Software (FOSS) in Government.

Key Points**Free and Open Source Software (FOSS):**

- It doesn't mean software is free of cost.
- The term "free" indicates that the software does not have constraints on copyrights.
- It means that source code of the software is open for all and anyone is free to use, study and modify the code.
- It allows other people also to contribute to the development and improvement of the software like a community.
- The Free and Open Source Software may also be referred to as Free/Libre Open Source Software (FLOSS) or Free/Open Source Software (F/OSS).
- Examples of FOSS include MySQL, Firefox, Linux, etc.
 1. Another category of software is 'Closed Source Software'.
 2. The software which uses the proprietary and closely guarded code.
 3. Only the original authors have the authority to access, copy, and alter that software.
 4. In this case one does not purchase the software, but only pay to use it.

About the Challenge:

- It will harness the innovation potential of the FOSS community and start-ups to solve critical issues in Government Technologies (GovTech).
- It calls upon FOSS innovators to submit implementable open source product innovations in CRM and ERP with possible applications for Govtech in Health, Education, and Agriculture etc.
- CRM stands for "Customer Relationship Management".
- ERP stands for "Enterprise Resource Planning" and refers to software and systems used to plan and manage all the core supply chain, manufacturing, services, financial and other processes of an organization.
- It is a key component of GovTech 3.0, which is about building secure and inclusive Open Digital Ecosystems (ODEs).
- The participants are eligible for incubation support, prize money, mentorship by domain experts, institutional support from eminent organizations for incubation of ideas and listing of solutions on Government e Marketplace (GeM).

Significance:

- India is well positioned to become a vibrant hub for Free and Open Source Software (FOSS) innovations, due to the large number of 4G data subscribers in India.
- 96% of the subscribers access the digital world via open-source based mobile operating systems (primarily Android).
- India's largest-government projects (including Aadhaar) and many technology start-ups have also been built using FOSS.

Other Related Initiatives:

- The Government of India had issued a Policy on Adoption of Open Source Software in 2015.
- Free and Open Source Software for Education (FOSSEE) Project: It is a project promoting the use of open source software in educational institutions. It does that through instructional material, such as spoken tutorials, documentation, such as textbook companions, awareness programmes, such as conferences, training workshops, and internships.
- The government has also made the android version of the Aarogya Setu app open source.

2. Section 144

Section 144 of the Code of Criminal Procedure (CrPC) of 1973 has been imposed in Gurugram, owing to the rising number of Covid-19 cases. Section 144 has often been used to clamp down on telecommunication services and order Internet shutdowns.

Key Points**About Section 144 :**

- This law empowers the magistrate of any state or union territory in India to pass an order prohibiting the gathering of four or more people in a specified area.

- It is imposed in urgent cases of nuisance or apprehended danger of some event that has the potential to cause trouble or damage to human life or property.
- This order can be passed against a particular individual or general public.

Features of Section 144:

- It places restrictions on handling or transporting any kind of weapon in the given jurisdiction. The maximum punishment for such an act is three years.
- According to the order under this section, there shall be no movement of public and all educational institutions shall also remain closed.
- Further, there will be a complete bar on holding any kind of public meetings or rallies during the period of operation of this order.
- It is deemed a punishable offence to obstruct law enforcement agencies from disbanding an unlawful assembly. It also empowers the authorities to block internet access in the region.
- The ultimate purpose of Section 144 is to maintain peace and order in the areas where trouble could erupt to disrupt the regular life.

Duration of Section 144 Order:

- No order under this section can remain in force for a period of more than 2 months.
- Under the state government's discretion, it can choose to extend the validity for two more months with the maximum validity extendable to six months.
- Once the situation becomes normal, Section 144 levied can be withdrawn.

Difference between Section 144 and Curfew:

- Section 144 prohibits gathering of four or more people in the concerned area, while during curfew people are instructed to stay indoors for a particular period of time. The government puts a complete restriction on traffic as well.
- Markets, schools, colleges and offices remain closed under the curfew and only essential services are allowed to run on prior notice.

Criticism of the Section:

- The criticism is that it is too broad and the words of the section are wide enough to give absolute power to a magistrate that may be exercised unjustifiably.
- The immediate remedy against such an order is a revision application to the magistrate himself.
- An aggrieved individual can approach the High Court by filing a writ petition if his fundamental rights are at stake. However, fears exist that before the High Court intervenes, the rights could already have been infringed.

Court's Ruling on Section 144:

Dr Ram Manohar Lohiya case 1967, the Supreme Court held that "no democracy can exist if 'public order' is freely allowed to be disturbed by a section of the citizens".

The Supreme court in another recent judgement said that the section cannot be used to impose restrictions on citizens' fundamental right to assemble peacefully, cannot be invoked as a 'tool' to 'prevent the legitimate expression of opinion or grievance or exercise of any democratic rights'.

NATIONAL ISSUE**Groundwater Depletion In India**

In a recent study, it has been found that groundwater depletion in India could reduce winter cropped acreage significantly in years ahead. The researchers studied India's three main irrigation types on winter cropped areas: dug wells, tube wells and canals. The researchers also analysed the groundwater data from the Central Ground Water Board. Wheat, barley, peas, gram and mustard are grown in winter.

Key Points**Present Scenario:**

- India has achieved impressive food-production gains since the 1960s, due to an increased reliance on irrigation wells, which allowed Indian farmers to expand production into the mostly dry winter and summer seasons.
- India is the world's second-largest producer of wheat and rice and is home to more than 600 million farmers.
- India produces 10% of the world's crops and is now the world's largest consumer of groundwater, and aquifers are rapidly becoming depleted across much of India.
- In the green revolution era, policy-supported environment led to a large increase in rice cultivation in northwestern India mainly in Punjab and Haryana which are ecologically less suitable for rice cultivation due to predominantly light soils.

- This policy-supported intensive agriculture led to unsustainable groundwater use for irrigation and in turn groundwater scarcity.

Findings of the Study:**Related to Groundwater:**

- Groundwater is a critical resource for food security, accounting for 60% of irrigation supplies in India, but unsustainable consumption of groundwater for irrigation and home use is leading to its depletion.
- Groundwater depletion in India could result in a reduction in food crops by up to 20% across the country and up to 68% in regions projected to have low future groundwater availability in 2025.
- It is found that 13% of the villages in which farmers plant a winter crop are located in critically water-depleted regions.
- The results suggest that these losses will largely occur in northwest and central India.

Related to Switching to Canal Irrigation:

- Indian government has suggested that switching from groundwater-depletion wells to irrigation canals is one way to overcome projected shortfalls.
- The irrigation canals divert surface water from lakes and rivers.
- However, switching to canal irrigation has limited adaptation potential at the national scale.
- The study suggests that switch to canal irrigation will not fully compensate for the expected loss of groundwater in Indian agriculture.
- Further, in comparison to tube well irrigation, canal irrigation was associated with less winter cropped area and cropped area that was more sensitive to rainfall variability.

Related to Impact on Crop Production:

- Reduction in Cropping Intensity: Even if all regions that are currently using depleted groundwater for irrigation will switch to using canal irrigation, cropping intensity may decline by 7% nationally and by 24% in the most severely affected locations.
- It is found that irrigation canals would favour farms close to canals, leading to unequal access.
- Reductions in Wheat Production: The reductions in crop area will occur largely in the states that grow wheat, potentially leading to substantial reductions in wheat production in the future.
- Food Security: The low wheat production could have ramifications for food security given that India is the second largest producer of wheat globally and wheat provides approximately 20% of household calories in India.

Cropping Intensity

- It refers to raising of a number of crops from the same field during one agricultural year; it can be expressed through a formula.
- $\text{Cropping Intensity} = \frac{\text{Gross Cropped Area}}{\text{Net Sown Area}} \times 100$.
- Gross Cropped Area: This represents the total area sown once and/or more than once in a particular year, i.e. the area is counted as many times as there are sowings in a year. This total area is also known as total cropped area or total area sown.
- Net Sown Area: This represents the total area sown with crops and orchards. Area sown more than once in the same year is counted only once.
- Around 51% of India's geographical area is already under cultivation as compared to 11% of the world average.
- The present cropping intensity of 136% has registered an increase of only 25% since independence. Further, rainfed drylands constitute 65% of the total net sown area.

Way Forward

- Irrigation Infrastructure in Eastern India: There are enough groundwater resources supported with higher monsoon rainfall in eastern Indian states like Bihar. But due to lack of enough irrigation infrastructure, farmers are not able to make use of natural resources there.
- There is a need for better policies in eastern India to expand irrigation and thus increase agricultural productivity.
- This will also release some pressure from northwestern Indian states.
- Water-saving Technologies: Adoption of water-saving technologies like a sprinkler, drip irrigation.
- Less water-Intensive Crops: Switching to less water-intensive crops in some areas may help use the limited groundwater resources more effectively.

SOCIAL ISSUE**National Commission for Minorities**

Recently, the Delhi High Court has directed the Centre to fill up the vacant posts of chairperson and five other members of the National Commission for Minorities (NCM) by 31st July 2021.

Key Points

Genesis:

- In 1978, setting up of the Minorities Commission (MC) was envisaged in the Ministry of Home Affairs Resolution.
- In 1984, the MC was detached from the Ministry of Home Affairs and placed under the newly created Ministry of Welfare, which excluded linguistic minorities from the Commission's jurisdiction in 1988.
- In 1992, with the enactment of the NCM Act, 1992, the MC became a statutory body and was renamed as the NCM.
- In 1993, the first Statutory National Commission was set up and five religious communities viz the Muslims, Christians, Sikhs, Buddhists and Zoroastrians (Parsis) were notified as minority communities.
- In 2014, Jains were also notified as a minority community.

Composition:

- NCM consists of a Chairperson, a Vice-Chairperson and five members and all of them shall be from amongst the minority communities.
- Total of 7 persons to be nominated by the Central Government should be from amongst persons of eminence, ability and integrity.
- Tenure: Each Member holds office for a period of three years from the date of assumption of office.

Functions:

- Evaluation of the progress of the development of minorities under the Union and States.
- Monitoring of the working of the safeguards for minorities provided in the Constitution and in laws enacted by Parliament and the state legislatures.
- Ensures that the Prime Minister's 15-Point Programme for the Welfare of Minorities is implemented and the programmes for minority communities are actually functioning.
- Making recommendations for the effective implementation of safeguards for the protection of the interests of minorities by the central or state governments.
- Looking into specific complaints regarding deprivation of rights and safeguards of minorities and taking up such matters with the appropriate authorities.
- Investigates matters of communal conflict and riots. For example, the 2011 Bharatpur communal riots, as well as the 2012 Bodo-Muslim clashes in Assam, were investigated by the commission and their findings were submitted to the government.
- Observes the Minorities Rights Day every year on 18th December which marks the adoption of the "Declaration on the Rights of Persons belonging to National or Ethnic, Religious and Linguistic Minorities" by the United Nations in 1992.

Constitutional and Legal Provisions Related to Minorities

- The NCM Act defines a minority as "a community notified as such by the Central government."
- The Government of India has declared six religions namely, Muslims, Christians, Sikhs, Buddhists and Parsis (Zoroastrian) and Jain as religious minorities in India.

National Commission for Minority Education Institution (NCMEI) Act, 2004: It gives the minority status to the educational institutions on the basis of six religious communities notified by the government. The term "minority" is not defined in the Indian Constitution. However, the Constitution recognises religious and linguistic minorities.

Article 15 and 16: Prohibition of discrimination against citizens on grounds of religion, race, caste, sex or place of birth. Citizens' right to 'equality of opportunity' in matters relating to employment or appointment to any office under the State, and prohibition in this regard of any discrimination on grounds of religion, race, caste, sex or place of birth.

Article 25 (1), 26 and 28: People's freedom of conscience and right to freely profess, practise and propagate religion. Right of every religious denomination or any section to establish and maintain institutions for religious and charitable purposes, manage its own religious affairs, and own and acquire

property and administer it. People's freedom as to attendance at religious instruction or religious worship in educational institutions wholly maintained, recognized, or aided by the State.

Article 29: It provides that any section of the citizens residing in any part of India having a distinct language, script or culture of its own, shall have the right to conserve the same. It grants protection to both religious minorities as well as linguistic minorities. However, the Supreme Court held that the scope of this article is not necessarily restricted to minorities only, as use of the word 'section of citizens' in the Article includes minorities as well as the majority.

Article 30: All minorities shall have the right to establish and administer educational institutions of their choice. The protection under Article 30 is confined only to minorities (religious or linguistic) and does not extend to any section of citizens (as under Article 29).

Article 350-B: The 7th Constitutional (Amendment) Act 1956 inserted this article which provides for a Special Officer for Linguistic Minorities appointed by the President of India. It would be the duty of the Special Officer to investigate all matters relating to the safeguards provided for linguistic minorities under the Constitution.

SCIENCE & TECHNOLOGY

Reasons for Rising Covid-19 Infections

The ongoing second wave of Covid-19 infections has shaken the country and is more devastating than the first wave. The rise in case numbers has been exponential in the second wave.

Key Points

Protocol Fatigue:

- When cases started declining, people just broke out of the protocol of wearing a face mask, washing hands regularly and maintaining social-physical distance.
- Gatherings began becoming large particularly January 2021 onwards.
- Rules were relaxed. Penalties were not enforced. The pattern was seen across the country allowing the novel coronavirus to create a second and possibly stronger wave.

Mixed Signal from Government:

- The queues outside polling booths and gatherings at the election rallies of all the parties defied Covid-19 protocol. This sent a confusing message to the public and also the grassroots-level functionaries of the government. It weakened the vigil against the pandemic.
- Urban Mobility:
- India has recorded over 1.2 crore cases of Covid-19 yet the pandemic is still mostly concentrated around cities, especially the bigger cities. These cities have greater mobility giving more opportunities for the virus to spread from one person to another when the guard is lowered.

Containment Zones:

- In the current wave, the marking of the containment zone has been less strict. In cities, the government has asked civil authorities to adopt micro-containment, with perhaps just a floor or a house defined as a containment zone.
- Earlier, an entire apartment or area would be made a containment zone, reducing the chances of transmission of the virus.

Mutations:

- Besides the human factors, the evolution of coronavirus is among the major reasons for the second wave. Scientists have detected numerous mutations in the SARS-CoV-2, the coronavirus that causes Covid-19. Some of these mutations have produced what they call Variants of Concern (VOCs).
- India has reported such VOCs from several states including the worst-impacted ones by the second wave of Covid-19 pandemic.
- The L452R mutation found in the variant B.1.617.1, first detected in India, too has been associated with increased infectivity.

Variants of Concern:

- These are variants for which there is evidence of an increase in transmissibility, more severe disease (increased hospitalizations or deaths), significant reduction in neutralization by antibodies generated during previous infection or vaccination, reduced effectiveness of treatments or vaccines, or diagnostic detection failures.

Increased Testing:

- Increased testing is another reason why India is detecting more cases in the second wave of the Covid-19 pandemic.

- The sero-surveys have shown that India had greater Covid-19 exposure than revealed through confirmed cases of coronavirus infection on the basis of laboratory tests.
- Earlier people were reluctant to go for Covid-19 tests but now easier availability of Covid-19 testing, improved disease-management in hospitals and rollout of Covid-19 vaccination programme has made people more confident about opting for the test.

Asymptomatic Persons:

- Asymptomatic (showing no symptoms) person, who carries the virus, would have spread the infection. In India, 80-85% of the population are asymptomatic.
- Inadequate Health Infrastructure:
- India also failed to seize the opportunity to augment its healthcare infrastructure and vaccinate aggressively.

IMPORTANT FACTS FOR PRELIM**Exercise VARUNA**

The 19th edition of the Indian and French Navy bilateral exercise 'VARUNA-2021' is being conducted in the Arabian Sea. Earlier this year, the Indian Navy took part for the first time in the France-led naval exercise "La Pérouse" with the navies of the US, Australia and Japan.

Key Points**About the Exercise:****Background:**

- The Indian and French Navies have been conducting bilateral maritime exercises since 1993. Since 2001, these exercises have been called 'VARUNA'.
- These interactions further underscore the shared values as partner navies, in ensuring freedom of seas and commitment to an open, inclusive Indo-Pacific and a rules-based international order.

2021 Exercise:

- This is the first time that the United Arab Emirates (UAE) is participating in the Varuna maritime exercise.
- The 'Varuna' joint exercise is part of the French carrier strike group's 'CLEMENCEAU 21' deployment, which the French Navy is conducting in the eastern Mediterranean, the Gulf and the Indian Ocean (Arabian Sea).
- Its goal is to contribute to the stabilization of these strategic zones and strengthening cooperation with the navies of partner countries, in particular India for the Indian Ocean component.
- As part of this deployment, the Carrier Strike Group is also taking part in anti-ISIS (the Islamic State of Iraq and Syria) operations.
- The exercise will see high tempo-naval operations at sea, including advanced air defence and anti-submarine exercises, tactical manoeuvres, underway replenishment and other maritime security operations.

Other Indo-French Joint Exercises:

- Desert Knight-21 and Garuda (Air exercise)
- Varuna (Naval exercise)
- Shakti (Army exercise)

DAILY ANSWER WRITING PRACTICE

Q. Explain the Green and raw: On 'tribunalisation' of justice. (250 words)

Ans:

Introduction:

- The establishment of tribunals as adjudicatory bodies in specific fields is based on the idea that specialisation and expertise are required to decide complex cases of a technical nature.
- The 'tribunalisation' of justice is driven by the recognition that it would be cost-effective, accessible and give scope for utilising expertise in the respective fields.
- Central to this scheme is the principle that the 'experts' appointed to these tribunals should bring in special knowledge and experience.

Context:

- Recently the appointment of former IAS officer, Girija Vaidyanathan, as Expert Member in the Southern Bench of the NGT, was challenged in the Madras High Court.

- Even though the court initially granted an interim stay on her appointment, it ruled that she was not ineligible, going by the criteria in the NGT Act.
- She was found to have fulfilled the eligibility requirements by virtue of her administrative experience of nearly five years in “dealing with environmental matters”.

About Tribunals:

- Tribunal is a quasi-judicial institution that is set up to deal with problems such as resolving administrative or tax-related disputes.
- They are constituted with the objective of delivering speedy, inexpensive and decentralised adjudication of disputes in various matters.
- They are created to avoid the regular courts’ route for dispensation of disputes.
- They run in parallel to the courts and generally are less formal, less expensive and less time consuming.
- They are not originally a part of the Constitution.
- The 42nd Amendment Act introduced these provisions in accordance with the recommendations of the Swaran Singh Committee.
- The Amendment introduced Part XIV-A to the Constitution, which deals with ‘Tribunals’ and contains two articles:
 1. Article 323A deals with Administrative Tribunals. These are quasi-judicial institutions that resolve disputes related to the recruitment and service conditions of persons engaged in public service.
 2. Article 323B deals with tribunals for other subjects such as Taxation, Industrial and labour, Foreign exchange, import and export, Land reforms, Food, Ceiling on urban property, Elections to Parliament and state legislatures, Rent and tenancy rights.

NGT mandates as a criteria:

- The NGT Act spells out two kinds of criteria — one based on qualifications and practical experience, and another on administrative experience in the field — and a candidate has to fulfil only one of them.
- For the first, a masters’ or a doctorate in science, engineering or technology, with 15 years’ experience in the relevant field, including five in environment and forests in a national level institution, is needed.
- The fields include pollution control, hazardous substance management and forest conservation.
- On the other hand, the administrative experience criterion is shorn of detail, and merely stipulates 15 years’ experience, of which five should have been in “dealing with environmental matters” in either the Centre or the State or any reputed institution.
- Even though Ms. Vaidyanathan’s stint as Secretary, Environment and Forests, Tamil Nadu, and Chairperson of the State Pollution Control Board together amounted to only 28 months, the court accepted the contention that her tenure as Health Secretary should also be considered.
- The court also observed wryly that it is an entirely different matter whether administrative experience in the second criterion should be regarded as equivalent to “the real expertise” indicated in the clause on qualifications.

Problems in functioning of Tribunals:

- Tribunals operate under the thumb of parent administrative ministries against whom many of them are meant to pass orders, therefore remaining at their mercy with visible and invisible strings for facilities, infrastructure and also rule-making.
- The secretary of the said Ministry sits on the panel for selecting and reappointing the adjudicating members and also has a role to play in disciplinary committees.
- For instance, the defence secretary is a part of the committee for selection and re-appointment of members of the Armed Forces Tribunal, and the said secretary is that very officer against whom all tribunal orders are to be passed.
- Under the garb of providing cheaper and informal adjudication, appeals have been provided, on very limited grounds, directly to the Supreme Court from some tribunals making access to justice a far call with some litigants accepting injustice rather than challenging orders simply because they cannot afford prohibitive costs of litigation in the apex court.
- Persons who at times have served as part of the same ministries are appointed as members and who carry with them their own personal experiences and over-familiarity making justice subjective as compared to judges who bear no such baggage and are trained to be objective.

- A majority of non-judicial members are not legally qualified and hence are not even eligible to appear before such tribunals while they are allowed to exercise judicial functions while sitting on the bench.
- Some tribunals are not even vested with powers of civil contempt thereby leaving them toothless qua enforcement.

Conclusion:

- Considering the ineffectiveness of tribunals in the past there is a need to look for alternative dispute redressal mechanism, something which goes beyond formal structure – yet is guided by the rule bound and predicted path.
- The court rightly declined to interfere with the appointment, as the equivalence found in the rules falls under the domain of Parliament.
- At a time when the need, relevance and composition of tribunals are under judicial scrutiny, and the Centre itself has abolished some of them, it would be salutary if the government spelt out with clarity, as the court has suggested, the extent to which a bureaucrat's involvement in environmental matters could be regarded as equivalent to expertise.
- It should also show greater urgency in implementing earlier Supreme Court directions to constitute a National Tribunals Commission to supervise the appointment and functioning of tribunals.
- Community-based approach herein can help resolve water related disputes effectively, amicably and sustainably.

DAILY QUIZ

Q. Consider the following statements regarding National Dairy Development Board (NDDB).

1. National Dairy Development Board is an institution of national importance set up by an Act of Parliament of India.
2. Cooperative principles and cooperative strategies are fundamental to the board's efforts.
3. It organises farmer's orientation programmes across the country, under which women farmers are trained in scientific best practices on animal health and clean milk production.

Which of the above statements is/are correct?

- a) 2
- b) 1,2
- c) **1,2,3**
- d) 3 only

Q.2 Consider the following statements.

1. Gram Sabha is a channel to include the less privileged section of society and ensure their participation in the village level governance.
2. Construction and maintenance of roads within the village is not the responsibility of the Gram Panchayat (GP).
3. Gram Panchayats generate their own source of revenue in the form of tax or non-tax revenue by renting shops, house tax and clean water fee.

Which of the above statements is/are correct?

- a) **1,3**
- b) 2,3
- c) 3,1
- d) 1,2,3

Q.3 According to recent Bird census, there is a decline in the migratory birds. What could be the probable reasons behind this?

1. Increasing human footprints
2. Disturbance, especially around the habitats for the migratory birds
3. Cultivation of water chestnuts at water bodies
4. Increasing water level of water bodies

Select the correct answer code:

- a) 2 only
- b) 1,2
- c) **1,2,3,4**
- d) 1,3

4. Consider the following statements regarding United Nations Convention on the Law of the Sea (UNCLOS).
1. UNCLOS is a UN specialised agency that defines the rights and responsibilities of nations with respect to their use of the world's oceans and the management of marine natural resources.
 2. International Seabed Authority (ISA) and International Tribunal for the Law of the Sea (ITLOS) were established by the UNCLOS.

Which of the above statements is/are correct?

- a) 1 only
 - b) 2 only**
 - c) Both 1 & 2
 - d) Neither 1 & nor 2
5. Israel has borders with which of the following countries.
1. Saudi Arabia
 2. Egypt
 3. Turkey
 4. Jordan
 5. Lebanon

Select the correct answer code:

- a) 2,4,5**
- b) 1,3,4
- c) Neither 1 nor 2
- d) 2,3,4,5



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