

# CURRENT AFFAIRS

WEEKLY

WEEK: 4  
JUNE  
2022

## MAINS

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- ❑ A 'man's Parliament' striving for an inclusive India

GS-II

- ❑ Agnipath Scheme, radical scheme to recruit soldiers
- ❑ Demolition drives may challenge the rule of law
- ❑ Centre focuses on access to Anganwadi services for migrants
- ❑ Tribal rights
- ❑ Hate Speech
- ❑ Inter-state council

GS-III

- ❑ Freebies are good or bad
- ❑ The World Competitiveness Index 2022
- ❑ Cabinet approves mega 5G auction
- ❑ Water resource management in India

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- ❑ New map of Earth's tectonic plates
- ❑ What West Seti power project can mean for India-Nepal ties

POLITY & GOVERNANCE

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- ❑ New maternal nutrition scheme launched in Gujarat
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- ❑ Nicotine rises gradually in brain
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- ❑ China launches third aircraft carrier in major military milestone
- ❑ China to adopt genetically modified maize and soy
- ❑ First grassroots innovation-based standards formulated by Bureau of Indian Standards
- ❑ 'Cosmic cannibalism'

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## — **Disclaimer** —

The current affairs articles are segregated from prelims and mains perspective, such separation is maintained in terms of structure of articles. Mains articles have more focus on analysis and prelims articles have more focus on facts.

However, this doesn't mean that Mains articles don't cover facts and PT articles can't have analysis. You are suggested to read all of them for all stages of examination.

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# **SECTION: A**

## **(MAINS)**

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**CURRENT AFFAIRS**

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# A 'MAN'S PARLIAMENT' STRIVING FOR AN INCLUSIVE INDIA

## CONTEXT

Despite the share of women legislators in the Lok Sabha peaking at 15.03% as of April 2022, India is still worse than 140 countries in the representation of women in Parliament.

## ◎ BACKGROUND

- The 21st century has inherited the unfinished agenda of globalizing democracy in a more vibrant form.
- In many instances there is a feeling of unease about the achievement of representative democracy because of the ongoing tendency of democratic nations to exclude or marginalized large sections of society.
- This is particularly the case for women right across the world, and especially India.

- The global average for the share of women parliamentarians stood at 24.6%.
- Rwanda has the highest proportion of women in Parliament (over 60%).
- India ranks 148 out of 191 nations.

- For democracy to be truly representative and inclusive all citizens must have equal opportunities to participate within democratic processes.

## ◎ ANALYSIS

### What is actually mean by 'women empowerment'?

- Ideally, women empowerment is not about giving several ministerial berths in a government or giving 33 per cent job reservation.
- It's about enjoying equal rights and having the freedom to choose and prioritise their lives, which will enable them to:
  - ▶ feel safe, be it in their homes, office or streets
  - ▶ hold important positions and lead the society
  - ▶ contribute to society and have people respect them for their capabilities

### An Enlightening Example

- Recently, **Droupadi Murmu**, a tribal politician, has got herself registered as the candidate for the forthcoming presidential elections.

- The 64-year-old former teacher, who comes from Odisha (Orissa) state, has spent decades with the BJP and had a stint as a state governor.
- If elected, she would be the **country's first tribal leader** in the top post.

### Why we need more women in politics?

- **Reflecting the overall sex ratio-** For a country whose sex ratio is tilted towards women (NFHS-5), it cannot cater to the majority of its population if the ratio in Parliament is not the same.
- **Women centric policies-** More women in Parliament would mean more women-centric issues could be raised. For a country like India, where **women's safety** is one of the biggest issues, perhaps more attention and empathy at the top would have an enormous impact.
  - ▶ For example, in parliaments or during the process of policy-making, there are not enough conversations about menstrual health. There is a dire need for better solutions like tampons and menstrual cups to reach rural areas, too, but the lack of information and access is a stark contrast to the urban population. Even in a slum area of Delhi, families still use cloth.
- **Doing away with the discriminatory laws-** For centuries, women had been discriminated against, but as society developed, women could get to the table and raise their voices against the atrocities they faced. A broad representation of women in politics would allow the reformation of discriminatory laws against the gender too.
- **Providing will to report crimes-** Political representation of women led to higher rates of crime reporting. Also it is observed that women are willing to report crime in villages with female representation in the council. Moreover, the police force is more responsive to crimes against women in areas which have gender-based affirmative action policies.
- Women leaders' investments led to **improved human development outcomes and women's entrepreneurship**.

### Barriers to women's participation

- Patriarchal Politics: Politics is often seen as a male bastion, and women are discouraged from entering it on the pretext that it is not a 'feminine' profession.
- Gender stereotypes -The biggest hurdle for women in politics is the gender stereotypes in society and a discriminatory attitude in general. Even though India has had a few prominent female political leaders, most have not been put on the kind of pedestals that males in similar roles have enjoyed.

South Asia has had the largest number of women heads of state — including **Sirimavo Bandaranaike, Chandrika Kumaratunga, Indira Gandhi, Khaleda Zia, Sheikh Hasina, and Benazir Bhutto** — of any region in the world till recently.

- **Stigma attached with politics**-Even in the 21st century, politics is still considered dirty. The norms and perceptions of our society still want women to be saints, and saints don't tread muddy paths. Hence, politics is not considered the right choice of work for females.
- **Social Conditioning**-In India, the scales of household jobs are still tilted toward women, and hence, the disproportionate setting does not enable women to fully take over in their professional space.
- **Patriarchal mindset**-Under the canopy of patriarchy, women face a myriad of problems including backlash from family members, political parties ostracizing women candidates, character assault, harassing women on the basis of their clothing choices, etc.
- Language still not gender neutral - After 75 years of Independence, and 'Azadi Ka Amrit Mahotsav', Parliament often refers to women in leadership positions as Chairmen and party men. In the Rajya Sabha, the Rules of Procedure continue to refer to the Vice President of India as the ex-officio Chairman, stemming from the lack of gender neutral language in the Constitution of India.
- **Less political will:** The bill to reserve 33 per cent seats for women in Parliament and state legislatures was passed in the Rajya Sabha in 2010, but it was never introduced in the Lok Sabha.

### How to create an inclusive political space led by women?

- **Women inspire women**-The first step towards encouraging more women to join politics is to have more prominent female personalities at the top and decision-making levels in parties. A more inclusive society, in general, would see a ripple effect in politics, where women would be able to take center stage.

### Honouring women

Paintings of **Draupadi, Sita, Razia Sultana, Akka Mahadevi, Ahilya Holkar** and other women from India's mythology and history are likely to grace the walls of the **new Parliament building** being built as part of the **Central Vista redevelopment project**.

- **Education not literacy**- Education and not just literacy would go a long way in creating an inclusive political space. At the moment, an institutional degree does not hold weightage in politics, but education allows individuals to be more broad-minded, secure, motivated, respectful and empathetic.
- **Safe political environment**-For women to feel safe in a political environment, their co-workers must be sensitive, and there has to be a level of respect at all times. Educated individuals would perhaps bring that to the table.
- **Enhancing inclusivity** -To encourage inclusivity, women must have easy access to public infrastructure and facilities. There has to be a clearly-defined pathway from entering a political party to making it to the top.
- **Social awareness campaigns:** Long held prejudices against women need to be dismantled through concerted social campaigns with help of educational institutions, media, religious leaders, celebrities, political leaders etc.

Citizen activism like **Shakti** – Political Power to Women, National Association of Women's Organizations (NAWO) and others, exert public pressure towards policies requiring half the election tickets to be accorded to women or arming the ECI with disciplining capabilities.

### CONCLUSION

At the macro level, there is a need for policy initiatives to empower women and tighter implementation of existing ones to reduce the gender disparity in India. But small steps also count. Higher representation of female leaders can be a source of inspiration for others to pursue their dreams and aspirations. A concerted effort between the local and national levels can drive change. Discriminatory attitude and gender stereotyping is the result of many years of social conditioning which can be broken with inspiring examples and political support.



# AGNIPATH SCHEME, RADICAL SCHEME TO RECRUIT SOLDIERS

## CONTEXT

The government unveiled its new Agnipath scheme for recruiting soldiers across the three services.

### ANALYSIS

#### What is the Agnipath scheme?

- Under the new scheme, **around 45,000 to 50,000 soldiers** (called as 'Agniveers') will be recruited annually for a short period, and most will leave the service in just four years.
- Of the total annual recruits, only **25 per cent** will be allowed to continue for another **15 years under permanent commission**.
- Eligibility Criteria:** The new system is only for personnel below officer ranks (those who do not join the forces as commissioned officers).
- Age limit:** Aspirants between the ages of **17.5 years and 21 years** will be eligible to apply. The recruitment standards will remain the same, and recruitment will be done **twice a year** through rallies.
- Training:** Once selected, the aspirants will go through training for **six months** and then will be deployed for three and a half years.

- Salary allocation:** During this period, they will get a starting salary of INR 30,000, along with additional benefits which will go up to INR 40,000 by the end of the four-year service.
- Employee benefits:** 30% of their salary will be set aside under a **Seva Nidhi programme**, and the Government will contribute an equal amount every month, and it will also accrue interest.
  - At the end of the four-year period, each soldier will get **INR 11.71 lakh** as a lump sum amount, which will be **tax-free**.
  - They will also get a **INR 48 lakh life insurance cover** for the four years. In case of death, the pay-out will be over INR 1 crore, including pay for the unserved tenure.
- Pension:** There shall be **no entitlement to gratuity and pensionary** benefits.

#### What is the significance of the Agnipath Scheme?

- Employment for Youth:** As only 25% recruits will be allowed to continue for another 15 years under permanent commission.
  - With the average age in the forces is 32 years today, It is expected to go down to **26 in 6 to 7 years** with the implementation of the scheme.
  - Notably, the Indian army in 1978 was more youthful than at present at the level of **Other Ranks (ORs)**, with **sepoys comprising 72.6%** of a total of 8,45,025 men. Today, the number of sepoys has **fallen below 40%**.
- Reducing Defence Bill:** A leaner force and reduced benefits will considerably decrease the defence bill, which has been a major concern for governments for many years.
  - This year's Budget estimate on defense pension is INR 1,33,826 Crore which is 4.4% of total expenditure (0.6% of the GDP).



### Agnipath Scheme

- Age 17.5-21 years
- Duration of service is four years, including training period
- 1st year salary package of Rs. 4.76 lakh (approx.) with upgradation of up to Rs. 6.92 lakh (approx.) in 4th year
- Post release: Seva Nidhi package of approx. Rs. 11.71 lakh, including interest (tax free)
- Non-contributory insurance cover of Rs. 48 lakh
- Agniveer skill certificate will assist in post release job opportunities
- 46,000 Agniveers to be recruited this year

TOI



- Pensions made up 28.4% of this year's defense budget. Further, the saved money can be utilized to buy state-of-art technology and equipment which are the backbone of modern warfare.
- **All India, All Class Recruitment:** The scheme will ensure 'All India, All Class' recruitment to the services. This is significant for the Army, where the regiment system has region and caste bases. These would be eliminated with time to allow anybody from any caste, region, class or religious background to become part of existing regiments.
- **Trained buffer youth:** The ex-agniveers could act as an adhoc buffer force who may be called to serve again for boosting national security in times of **external/internal threats**.
- **Economic Benefits:** The skills and experience acquired during the 4-year service will allow the soldiers to get employment in various fields. This will also lead to availability of a higher-skilled workforce to the economy which will be helpful in productivity gain and overall GDP growth.
- **Global Parity:** All major militaries in the world are undergoing reform. There is a trend towards reduction in the number of personnel and emphasis on increasing capital expenditure on modern weapons and equipment.

**Recent reform initiatives promulgated in defence sector**

- appointment of the Chief of Defence Staff (CDS)
- establishment of the Department of Military Affairs (DMA)
- announcement of several domestic industries—friendly procurement measures, particularly the
  - positive indigenisation list
  - the corporatisation of the Ordnance Factories (OFs) into seven DPSUs

**What are the challenges associated with the Agnipath Scheme?**

- **Exclusion of many students:** The government hopes to hire 46,000 "agniveer" this year. Although with the age limits, the recruitment may not include those who have been waiting for the hiring freeze since 2020 to end. More than a lakh vacancies have built up in the Indian Army alone over the

last two years, but under the new policy, not all may be filled.

- **Diversified regiments:** The Indian Army's experiments so far with diversity in closed regiments have yielded mixed results. There is a probability that the new scheme may do more harm than good in diversifying the static regiments.
- **Post-retirement concerns:** The ex-agniveers may have to face hardships in getting employment after 4 years of service. Especially when meaningful employment opportunities in significant or adequate numbers still elude an ever-increasing number of graduates.
  - Further, '**trained-to-kill**' soldiers being demobilized every year could prove dangerous if they **remain jobless and frustrated**.
  - Many believe it may lead to **militarisation of society**.
- **Short-duration training:** Many experts believe that shorter duration service could compromise on training, morale and commitment in comparison to the permanent recruits. Critics argue that agniveers may turn out of to be risk-averse with the bulk looking to secure an alternate career.

**What lies ahead?**

- **Proper reallocation of soldiers in alternate services:** The Government should help to rehabilitate soldiers who leave the services after four years. They can be provided with skill certificates and bridge courses that will help them in finding gainful employment.
- **Extension of Age-limit:** The age limit set up by the government is so less as it will leave many students preparing for army and other defense services for long time.
- **Sensitization of beneficiaries:** The society objects any sudden change and hence the government should handle this issue with care. The youth are future of our country and decisions related to them should be taken involving them and sensitize about the government's perspective.

**◎ CONCLUSION**

No reform can be fool-proof and without teething troubles. But as Agnipath Scheme concerns national defense and security, the Government will need to have a plan to anticipate and address the problems that lie beyond the bold step forward.

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# DEMOLITION DRIVES MAY CHALLENGE THE RULE OF LAW

## CONTEXT

Recent demolition drives in the aftermath of the Prophet Remarks row has challenged the certain basic tenets of law, including right of a person to be heard first, and the non-arbitrary power of the state to deprive a person from his/her property.

## ◎ BACKGROUND

- The founder of the modern 'legal profession', **A. V. Dicey** believed that there were two principles in the British unconstitutional constitution:
  - The sovereignty or supremacy of Parliament.
  - The rule of law.
- Dicey therefore saw the rule of law as a barrier (though not total control) of unlimited state power over the individual.

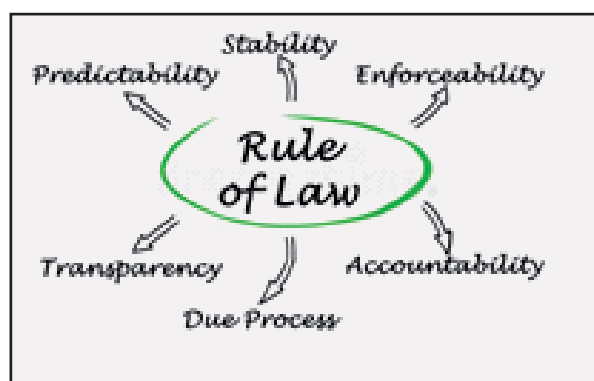


- For Dicey the law had **three key elements**:
  - No one shall be held guilty of any penal offense on account of any act or omission which did not constitute a penal offense, under national or international law, at the time when it was committed. The power of choice can lead to thinking.
  - No one shall be subjected to arbitrary interference with his privacy, family, home or correspondence or to attacks upon his honor and reputation.
  - The rule of law should not be based on any written constitution but on "common law"
- However the third aspect did not happen in India by adopting a Constitution that was made too foreign.
- In this regard not only India, many countries adopted a constitution based not on their traditional legal system but on the basis of western ideology of the 19th and 20th centuries.
- A total of three principles namely:
  - Greatness of the Law

- Equality before the law and equal protection of the Act
- The rule of the spirit of Law or no Supreme Law other than human rights as determined by the Courts

## ◎ ANALYSIS

### What is 'Rule of Law'?



- The rule of law is the legal principle that the law should govern the state and not by the arbitrary decisions of individual government officials.
- This is primarily related to the influence and authority of law in society, especially as a constraint on the actions of government officials.
- The rule of law doctrine begins in **England; A.V. Dicey** has three basic principles.
  - No one is punished except for lack of arbitrariness, that is, for violating the law.
  - **Equality under the Act:** All citizens (rich or poor, high or low, formal or informal) are equally subject to the common law of a country governed by a common court.
  - **Personal rights advantage**, i.e. The Constitution is not the Constitution as a source of individual rights, but the result of individual rights defined and enforced by the courts.

### Highlights of the issue

- **Principles of Law include:**

- ▶ The right of a person to be heard first, once
  - ▶ That the state may deprive a person of his or her property only after due process and under the authority of applicable law as authorized under Section 300A of the Constitution.
  - **Status of the Supreme Court:**
    - ▶ Property rights under Article 300A are a human right.
    - ▶ Article 300A is a powerful right. The demolition of houses was the result of political incitement by officials. Actions such as demolition were a nuclear holocaust held by problem makers.
  - **Jamiat Ulama-i Hind's** application to the Supreme Court ruled that the retaliation by the Uttar Pradesh government for revenge was in violation of laws enacted by the state legislature itself.
    - ▶ Refer to Section 10 of the **Uttar Pradesh Act (Building Performance Management Act) 1958** which stipulates that a building should not be demolished without giving the parties a "sound" opportunity.
    - ▶ Section 27 of the Uttar Pradesh Urban Planning and Development Act, 1973 requires that the affected person be heard and given 15 days' notice before proceeding with the demolition.
    - ▶ Apart from this, the Act allows a person who is dissatisfied with a severance order to lodge an appeal within 30 days.
  - How they are violating several Rights of the People?
  - Right to housing: The right to housing is a fundamental right recognised under Article 21 of the Indian Constitution.
  - Further, it is also a well-documented right under the international human rights law framework, which is binding on India.
  - As per UDHR; Article 25 of the Universal Declaration of Human Rights (UDHR) states that "everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care".
  - Article 12 of UDHR prohibits arbitrary interference in an individual's right to property.
  - It also stipulates that "everyone has the right to the protection of the law against such interference or attacks".
  - **Supreme Court's stand:**
    - ▶ The apex court in cases like **Bachan Singh vs State of Punjab, Vishaka vs State of Rajasthan, and in the Puttaswamy vs Union of India** has stated that the fundamental rights must be read and interpreted in a manner which would enhance their conformity with international human rights law.
  - **International Human Rights Violation:** It is also a well-documented right under the international human rights law framework, which is binding on India.
  - **Article 12** of the UDHR states that "no one shall be subjected to arbitrary interference with his privacy, family, home or correspondence or to attacks upon his honour and reputation".
- What can be done further?**
- **Judicial interference:** As the custodian of India's constitutional order, it is high time that the judiciary acted and imposed necessary checks on the unbridled exercise of power by the executive.
  - **International agencies:** Courts should use international law to counter the nationalist-populist discourse.
  - **Legal Provisions:** Any justification for a demolition drive, as a penal consequence to a criminal act is totally against established canons of criminal justice.
  - **Saving the Basic structure:** The conduct of demolition drives, as a retaliatory measure, even with the avowed object to curb violence is a clear act of subversion of the principle of rule of law.

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# CENTRE FOCUSES ON ACCESS TO ANGANWADI SERVICES FOR MIGRANTS

## CONTEXT

The Centre has instructed state governments and their Women and Child Development (WCD) departments to ensure digitization of anganwadi services so that migrating families can continue accessing the government's Take Home Ration scheme even if they move to other states.

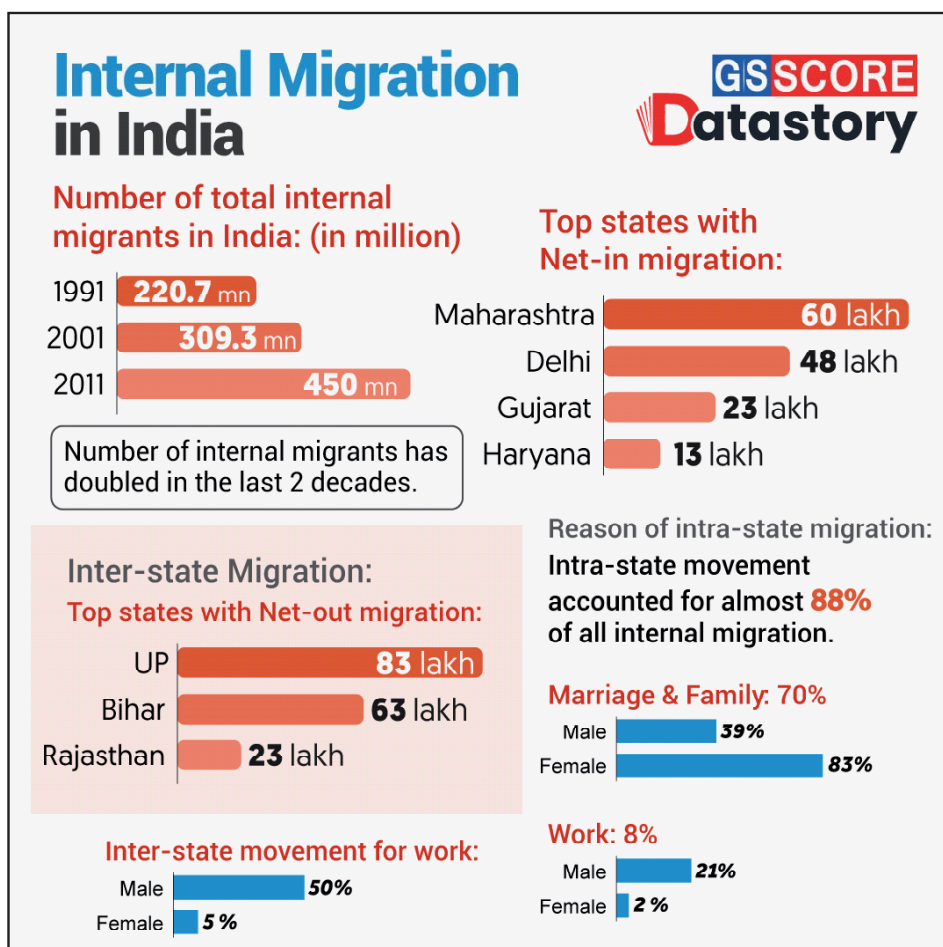
## ● BACKGROUND

- During the recent COVID pandemic, the country has seen unprecedented migration of workers and families.
- WCD Ministry officials' says-"Migrating families often fall through the cracks and stop receiving benefits of anganwadi services when they relocate from one state to another or even between blocks and districts within a state".

- Anganwadi is a type of rural mother and child care centre in India.
- They were started by the Indian government in 1975 as part of the Integrated Child Development Services program to combat child hunger and malnutrition.
- A typical Anganwadi center provides basic health care in Indian villages.
- It is a part of the Indian public health care system. Basic health care activities include contraceptive counseling and supply, nutrition education and supplementation, as well as pre-school activities.
- The centers may be used as depots for oral rehydration salts, basic medicines and contraceptives.

## ● ANALYSIS

What are Anganwadi services?



### Grounds for migration of people

- **Economic migration** - moving to find work or follow a particular career path
- **Social migration** - moving somewhere for a better quality of life or to be closer to family or friends
- **Political migration** - moving to escape political persecution or war
- **Environmental** - causes of migration include natural disasters such as flooding, pandemic like COVID.

### Challenges for migrants

- **Poor accommodation:** Vulnerable individuals, especially children, are prone to respiratory infections and gastrointestinal illnesses because of poor living conditions, suboptimal hygiene and deprivation during migration.
- **Gender specific:** Female migrants who do not have access to and are not informed about the availability of reproductive health services, including antenatal care, may receive late diagnoses, and their conditions may sometimes be life-threatening for women, mothers and their babies.
- **Susceptibility to diseases:** Migrants come from communities affected by war, conflict or economic crisis and undertake long, exhausting journeys often increase their risks for diseases, which include communicable diseases, particularly measles, and food- and waterborne diseases.
- **Lack of basic amenities:** Migrants are more likely to experience disrupted or uncertain supplies of safe food and water, especially under difficult and sometimes desperate circumstances. In these conditions, people may be more prone to use inedible or contaminated food ingredients, cook food improperly or eat spoiled food.
- **Hurdles in Inoculation:** Providing vaccination in migrants is a tremendous challenge in itself due to lack of awareness in migrants, inadequate documentation and vaccine hesitancy.
- **Political exclusion:** The political class ignores them because they don't count as votes, especially in the case of inter-state migrants.

### Role of Anganwadi services in dealing these challenges

- **Anganwadi Workers will mobilize the community and facilitate them in accessing health and health related services available at the Anganwadi/sub-centre/primary health centers, such as immunization, ante natal**

### **check-up, post-natal check-up, supplementary nutrition, sanitation and other services being provided by the government.**

- Anganwadi Workers ensure that regular health and medical check-ups for women 15- to 49-years-old take place and that all women and children have access to these check-ups.
- Anganwadi Worker (AWW) guides **ASHA** in performing activities such as organizing Health Day once/twice a month at Anganwadi Centre and orientating women on health related issues such as importance of nutritious food, personal hygiene, care during pregnancy, importance of immunization etc.
- Anganwadi workers need to provide care for newborn babies and ensure that all children below the age of 6 are immunized.
- They are expected to provide antenatal care for pregnant women and ensuring that they are immunized against tetanus. In addition to this they provide post-natal care to nursing mothers.
- They make home visits for educating parents to enable mothers to plan an effective role in the child's growth and development and special emphasis on new born child.
- To identify the disability among children during her home visits and refer the case immediately to the nearest PHC or District Disability Rehabilitation Centre.
- Assist mothers to establish breastfeeding and overcome any difficulties, which is the best way to prevent malnutrition, some diseases and mortality among infants according to WHO.
- Anganwadi centers were allowed to inoculate the migrants with verification in the recent covid pandemic.

### How the move will be advantageous?

- The complete digitization of the process of registration will allow the beneficiaries of one state to avail the aforesaid services in other states which will ensure that migrant families especially children can continue to get supplementary nutrition given by the government to curb the malnutrition.

### ◎ CONCLUSION

It's a praiseworthy move of the Centre the issues of migrants are real and undeniable. Government should ensure that each migrant must have full, uninterrupted access to a hospitable environment and, when needed, to high-quality health care, without discrimination on the basis of gender, age, religion, nationality or race.



## TRIBAL RIGHTS

### CONTEXT

A public interest litigation before the Supreme Court seeks changes in two decades-old laws that restrict the sale of tribal land to non-tribal.

#### ◎ BACKGROUND

- Ownership and access to land and forests has been critical to the tribal peoples' way of life as well, given the symbiotic relationship they share with **jal, jungle, aur jaanvar** (water, forests, and animals).
- In Jharkhand, there are two acts—the **Chhota Nagpur Tenancy Act, and the Santhal Pargana Tenancy Act**—which protect tribal peoples' right to their land, and hence **prohibit sale of their land to non-tribal populations**.
- However, over the years, there have been amendments to these acts that have weakened the position of tribal people in rural areas, and haven't helped those in urban areas either.
- At present, there are 64,000 litigations pending in the high court of Jharkhand, filed by tribal communities against these amendments.

#### Existing Acts in India

##### Chhota-Nagpur Tennacy Act

- It restricts transfer of tribal land to non-tribals.
- The CNT Act is effective in North Chhota Nagpur, South Chhota Nagpur and Palamau divisions, including areas under various municipalities and notified area committees.
- So far, the CNT Act has been amended as many as 26 times, latest in 1995.
- It is listed in the Ninth Schedule of the Constitution, so the act is beyond judicial review.
- It can only be repealed by the Parliament; the state government can only make amendments to it.
- In 1962 the Bihar government amended the CNT Act to include "economically weaker castes (EWCs)" belonging to the SC and OBC.
- The original Act applied only to the lands of Scheduled tribes (STs) and vested the power of land transfer on the plea of the right owner, with the deputy commissioner (DC).
- It notified a list of backward classes, the sale of whose land would be restricted as per the CNT Act.

#### Issues with the Act

- No up-gradation of Land Rights:**
  - There is poor mirroring of land records with the actual position on the ground.
  - Almost nine decades after the survey and settlement of Santhal Parganas in 1932, there is no authentic record of who is currently in possession of the land.
  - In case of land disputes, the standard procedure is to look up the record of rights of 1932 and deduce through the genealogy of the original tenant who the rightful possessor is today.
- Illegal market of land:**
  - Forces of demand and supply have led to the creation of an illegal market for land transfers and these cannot be legitimately recorded.
- Fake documents:**
  - Fake documents by themselves are not a problem unique to **Santhal Parganas**.
  - However, what makes it especially dangerous is the fact that government records are not updated enough.
  - Revenue courts cannot question the validity of a deed and this creates a huge roadblock in deciding cases since both parties produce seemingly legitimate deeds for the same piece of land in areas where transfers are allowed.
  - In the absence of the transactional history of a land parcel, it becomes extremely complicated to detect forged documents.
- Data generation:**
  - There are problems with the process of data generation. Land records modernization is a brilliant tool for improving land governance however there are some nuances that ought to be noted.
  - Despite extensive digitisation, land records still mirror only a tiny proportion of the actual landholdings.
- Land mortgage:**
  - Tribals not being able to mortgage their land since banks do not give loans for these lands as collateral owing to the provisions of the laws.

## PUSH FOR CHOTANAGPUR AND SANTHAL



■ Land rights will, however, remain intact, revenue and land reforms secretary KK Soan said on Tuesday.

HT FILE

■ Amendments proposed to section 21 of Chotanagpur Tenancy (CNT) Act, 1908, and section 13 of Santhal Pargana Tenancy Act, 1949

■ Will allow a scheduled tribe member with agricultural land to use it for commercial purposes after following due procedure of the law

■ The government will soon frame the rules of land conversion and tax, not exceeding 1% of land value

"Ratified by the tribal advisory council in January, the cabinet decision will be introduced in the state assembly for discussion. The bill will be sent to the President through the governor for assent to become law"

### • Exploitation and deprivation:

- The exclusion of division made exploitation of tribals in the region and even they are deprived of other governmental facilities.

### • Underdevelopment and poverty:

- Government schemes for development works cannot be implemented in these areas, due to which these areas remain underdeveloped and poor.

### Constitutional provisions

**Part X** of the Constitution contains special provisions relating to administration of Scheduled Areas and tribal areas.

#### Article 244 (1) of the Constitution:

- Provide that the Governor may make regulations for the peace and good government of any area in a State which is for the time being a Scheduled Area.
- It also prohibits or restricts the transfer of land by or among members of the Scheduled Tribes in such area, regulates the allotment of land to members of the Scheduled Tribes in such area; regulate the carrying on of business as money-lender by persons who lend money to members of the Scheduled Tribes in such area.

### The Panchayats (extension to the Scheduled Areas) Act, 1996:

- It provides for the extension of part IX of the Constitution relating to Panchayat to the Scheduled areas.
- The Act, inter-alia, provides that the Gram Sabha or Panchayats at the appropriate shall be consulted before making the acquisition of land in the scheduled areas for development projects and before resettling or rehabilitating persons affected by such projects in scheduled areas.

### The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006:

- Seeks to recognize and vest the forest rights and occupation in forest land in forest dwelling STs and OTFDs who have been residing in forests for generations.
- The responsibility for implementation of the Act lies with the States/UTs.

### Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (RFCTLARR) Act, 2013:

- In order to ensure fair compensation and timely and proper rehabilitation of displaced tribal people across the country, adequate provisions has been made under the act.



- The Act also lays down procedure and manner of rehabilitation and resettlement (R&R) wherein R&R is an integral part of the land acquisition plan itself.

### Suggestive measures

- Amendments in the act governing forest and tribal rights in the region will help.
- Control in Corruption and Strict administrative authorities can save tribal rights and their exploitation.

- Involvement of Civil societies in educating tribals.

### ◎ CONCLUSION

The acts were constituted in good faith and to protect the rights of the tribal peoples; however, urbanization has forced them to change their way of life to a certain extent. They are unable to unlock the potential of the land, and are being exploited by powerful elements—both within their community and outside of it. It might therefore be time to understand ground realities in greater detail, review existing provisions, and introduce amended laws that serve the interests of urban tribal peoples.

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# HATE SPEECH

## CONTEXT

The debate surrounding the comments by ruling party spokespersons have put the spotlight on the law that deals with criticism of or insult to religion.

### ◎ BACKGROUND

- India does not have a formal legal framework for dealing with hate speech.
- India prohibits hate speech through several sections of the Indian Penal Code, the Code of Criminal Procedure, and other laws which put limitations on the freedom of expression.
- Constitutionally, Article 19 gives all citizens the right to freedom of speech and expression but the said freedom of expression is subject to "reasonable restrictions" for preserving inter alia "public order, decency or morality".

#### What is hate speech?

- There is no international legal definition of hate speech, and the notion of what constitutes "hateful" speech is debatable.
- Hate speech is defined as any form of communication, whether spoken, written, or physical, that criticizes or discriminates against a person or a group based on their religion, ethnicity, nationality, race, color, descent, gender, or other identity factor.

#### Legal Provisions of Hate Speech in India

- Responsible speech is the essence of the liberty granted under **Article 21** of the Constitution.
- Article 19(2)** of the Constitution guarantees freedom of speech and expression to all citizens of India.
- Hate speech has not been defined in any law in India. However, legal provisions in certain legislations prohibit select forms of speech as an exception to freedom of speech.

#### Legislations around Hate speech

The Indian Penal Code, 1860 (hereinafter IPC);

- Section 124A** IPC penalises sedition
- Section 153A** IPC penalises 'promotion of enmity between different groups on grounds of religion, race, place of birth, residence, language, etc., and doing acts prejudicial to maintenance of harmony'.
- Section 153B** IPC penalises 'imputations, assertions prejudicial to national-integration'.

- Section 295A** IPC penalises 'deliberate and malicious acts, intended to outrage religious feelings of any class by insulting its religion or religious beliefs'.
- Section 298** IPC penalises 'uttering, words, etc., with deliberate intent to wound the religious feelings of any person'.
- Section 505(1) and (2)** IPC penalises publication or circulation of any statement, rumour or report causing public mischief and enmity, hatred or ill-will between classes.

#### Some Supreme Court Judgements

##### • Rangila Rasool case

- Rangila Rasool was a tract brought out by a Hindu publisher — that had made disparaging remarks about the Prophet's private life.
- Cases against the first pamphlet, filed under Section 153A, were dismissed by the Punjab and Haryana High Court, which examined the question whether targeting religious figures is different from targeting religions.
- This debate in interpretation prompted the colonial government to enact Section 295A with a wider scope to address these issues.

##### Ramji Lal Modi v State of Uttar Pradesh

- The constitutionality of Section 295A was challenged.
- The Supreme Court upheld the law on the grounds that it was brought in to preserve "**public order**".
- Public order is an exemption to the fundamental right to freedom of speech and expression and the right to religion recognised by the Constitution.

##### Ramlal Puri v State of Madhya Pradesh

- In 1973, the Supreme Court said the test to be applied is whether the speech in question offends the "ordinary man of common sense" and not the "hypersensitive man".
- However, these determinations are made by the court and the distinction can often be vague and vary from one judge to the other.

**Baragur Ramachandrappa v State of Karnataka:**

- A 2007 decision of the Supreme Court, "a pragmatic approach" was invoked in interpreting Section 295A.
- The state government had issued a notification banning Dharmakaarana, a Kannada novel on the ground that it was hate speech, invoking a gamut of provisions including Section 295A.

**Concerns associated**

- **Misuse of Laws:** Lower conviction rates for these provisions indicate that the process where a police officer can arrest without a warrant is often the punishment.
- **Violation of free speech:** Critics have pointed out that these laws are intended for the state to step in and restore "public order" rather than protect free speech.
- **Vague terms in the law:** The broad, vague terms in the laws are often invoked in its misuse.

- **Old-aged Laws:** Section 295A lie in the communally charged atmosphere of North India in the 1920s.

**◎ WAY FORWARD**

- Section 295A was passed in a different societal paradigm but as society has changed the law needs to change as well. If the law still reflects the ghosts of the past then there is no need for that law.
- Section 295A needs to change to accommodate both religious sentiments and freedom of expression in a harmonious manner.
- Rights of the individual need to be given the same importance as the right of the community.

**◎ CONCLUSION**

Hate speech needs to be understood as the starting point or origin of marginalizing a particular class of persons under 'fear of threat'. It should not be protected in the name of freedom of speech, otherwise it will lead to violation of principles on which Indian democracy is built on.

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## INTER-STATE COUNCIL

### CONTEXT

Tamil Nadu CM has urged the central government to increase the frequency of Inter-state council meetings to strengthen the spirit of cooperative federalism.

#### ◎ BACKGROUND

- The Constitution of India provides for a polity, which clearly defines spheres of authority between the Union and the States to be exercised in the fields assigned to them.
- Consistent with this, the Constitution has made an elaborate distribution of powers between the Union and the States in the areas of legislative, administrative and financial powers.
- The Union Government, constituted a Commission in 1988 under the Chairmanship of Justice **R.S. Sarkaria** to review the working of the existing arrangements between the Union and the States.
- One of the important recommendations of **Sarkaria Commission** was for establishing a permanent Inter-State Council as an independent national forum for consultation with a mandate well defined in accordance with **Article 263** of the Constitution of India.

#### ◎ ANALYSIS

##### What is Inter-state Council?

- This is an established mechanism "to support coordination and cooperation between nations and between Indian nations".
- The Interstate Council was established in accordance with Article 263 of the Constitution, which states that the President may establish such an institution if the need arises.
- The council is basically intended to serve as a forum for discussions between different governments.

##### Important role

- The Intergovernmental Council is a counselling body empowered to study and discuss common concerns between federal and states, or between states.
- There are also recommendations for better coordination of policies and actions on these subjects, as well as advice on general concerns for the State, which may be delegated by the Chair.
- It also considers other matters of general interest to the State that the Chair may refer to the Board.
- The Council can meet at least three times a year. There is also a standing committee of the council.

##### What are the major objectives of the Council?

- **Spirit of Cooperative federalism:** Establish a strong institutional framework to promote and support national cooperative federalism and revitalize councils and zone councils by organizing regular meetings.
- **Facilitates discussions** by the Zone Council and the Interstate Council on all pending and new issues of interstate and interstate relations.
- **Develop a robust system** to monitor the implementation of the recommendations they make.

##### Why this Council matters?

- The ISC is the only multilateral central national forum that operates directly within the framework of the **Constitution (Articles 263 (b) and (c))**, **issues such as GST, disaster management, terrorism, internal security, etc.**
- ISC's constitutional approval puts the state on a stronger foundation. This is an essential element in building the collaborative atmosphere needed to coordinate relations between the intermediaries. The
- Council helps fill the lack of trust between the center and the state. If it wasn't always the problem solver, it at least acted as a safety valve.

##### What are the major challenges and issues?

- **Advisory in nature:** Studying and discussing issues of common interest to some or all states or central governments is the only advisory body.
- **Non-permanent body; on President's discretion:** The Intergovernmental Council is not a permanent constitutional body for coordination between the state and the central government. Rather, the president can appoint him whenever he thinks it is in the public interest to establish such a council. The
- **Interstate Council** is to meet three times a year. The Inter-governmental Council has held only 12 meetings since its inception in 1990. Ten years have passed between the 10th meeting in 2006 and the 11th meeting in 2016, and the board reunited in November 2017.

- ISC also needs a **Secretary-General** to make regular meetings more fruitful.

## © CONCLUSION

Inter-State Council is a recommendatory body with duties to investigate and discuss the subjects of common interest between the Union and State(s)

or among the States, making recommendations particularly for better coordination of policy and action on these subjects and deliberating upon such other matters of general interest to the States which may be referred to it by its Chairman. The Council also deliberates upon such other matters of general interest to the States as may be referred by the Chairman to the Council.

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# FREEBIES ARE GOOD OR BAD

## CONTEXT

The newly elected Punjab government's announcement of providing up to 300 units of free power to every household has again raised questions—whether freebies are 'good or bad' for the economy.

### ◎ BACKGROUND

- The freebie culture was started by the Tamil Nadu state government, where the government promised free sarees, pressure cookers, television, washing machines and more.
- The **Amma Canteen** was also a huge success.
- In the north, it all started from Delhi, where the government promised free electricity, water, bus travel.

### ◎ ANALYSIS

#### What are freebies?

Freebies can be defined as something without charge or cost. It is a very well-known and widespread practice during election.

- Freebies that are usually distributed include **goods** like bicycles, smart phones, TVs, Laptops and **waivers** on bills (water, electricity, etc.)

#### Merit good vs public goods

- There is need to distinguish between the concept of merit goods and public goods on which expenditure outlays have overall benefits.
- Public goods are provided to the entire society. Merit goods are provided to targeted individuals. Hence in the case of merit goods, there is exclusion. On the other goods, there is no exclusion under public goods.

#### Are freebies and subsidies needed for developing nations like India?

Despite several impacts on the fiscal management of the government, it becomes very important for the developing nation to incentivize such subsidies and freebies because of various reasons:

- **Food security:** To ensure proper Food Security and the **Right to Food** as a fundamental right under **Article 21** of the constitution it becomes mandatory for the government to implement schemes for subsidized food.
- **Better Demography:** Ensuring nutritious food

to the citizens can create healthy and productive demography and help in the creation of Human Capital.

- **SDG goals:** Sustainable Development Goals have objectives to eradicate hunger (SDG-2) and good health and wellbeing (SDG-3) which can be achieved by the subsidized food schemes in developing nations.
- **Farmers Welfare:** India faces severe cases of farmers' distress; to improve the condition of the rural economy government needs to ensure schemes and freebies.
- **Social Welfare and security:** The welfare principle of the state encourages the states to introduce such schemes to promote social welfare and reduce inequality in society.
- **Reducing social inequality:** Providing food for all can reduce the prevailing social inequalities on various grounds.
- **Gender Equality (SDG-5):** To reduce gender inequality and provide a secure social status and recognize all the gender and their sexual orientation it becomes a compulsory step for the government to take such steps.
- **Induce demand:** During the slowdown and low demand phase these subsidies and freebies can induce demand in the market that can bring up the growth at a certain level.

#### Obligation on State

- In India, every citizen has a divine right to produce children and Government has the unlimited duty and responsibility to feed, educate, provide education, health, employment to each of the children.
- The sole responsibility for bringing the population to this passe lies with the politicians.

#### Arguments in support of freebies

- **Ensuring basics:** The very basic argument in favor of freebies is that it the prime duty of the government to ensure basic needs like food, electricity, water etc. of the citizens, specially the underprivileged section.
- **Helping the marginal section:** Freebies enable

the government to address the concerns of marginalized sections of the society.

- **Revival of economy:** Freebies, at times, have the potential to boost consumption and ultimately help in reviving the economy.
- **Mitigation of income gaps; reducing inequality:** Freebies assist in mitigating the income gap between the rich and the poor in the same manner the methods like 'progressive taxation' do.

### Arguments in against of freebies; the dangerous nature of freebies

- **Distorted expenditure priorities:** Freebies undercut the basic framework of macroeconomic stability. The politics of freebies distorts expenditure priorities.
- **Fiscal deficit:** Freebies accounts for the economic burden on public exchequer and may lead to fiscal deficit.
- **Not 'actually' free:** Freebies are not free i.e. be it today or tomorrow ultimately tax payers have to bear the brunt
- **Tax avoidance:** People are generally become motivated to conceal their income in order to get freebies, also tax avoidance will happen that ultimately lead to revenue loss for the state.
- **Exploitation of resources:** Resources, provided for free are generally not valued as precious and won't be exploited optimally.

- **Inefficiency and corruption:** Freebies are accused of bringing down the productivity of masses and make them inefficient and reduce them to put minimal effort. At times lead to corruption in government offices.

### Can the Election Commission regulate freebies?

- Offering freebies either before or after elections is a policy decision of a political party, and it cannot regulate state policies and decisions taken by the parties.

### ◎ WAY FORWARD

- Culture of freebies is neither sustainable nor beneficial for the society at large. However, certain leverages and economic assistance are always welcomed for the upliftment of the marginalized section of the society and the people living below poverty line. It can be done through the schemes like MANERGA, direct benefit transfers; PDS so on and so forth.
- Government should use the money spent on freebies in employment generation and infrastructural development as advised by Madras HC which will lead to fiscal stimulus and capacity building of masses.

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# THE WORLD COMPETITIVENESS INDEX 2022

## CONTEXT

Recently, the annual World Competitiveness Index was released by the Institute for Management Development (IMD).

### ◎ BACKGROUND

- The **World Competitiveness Index** is a comprehensive annual assessment that serves as a global benchmark for country competitiveness.
- Global Indices and India's Rankings represent the country's performance on indicators that range from social to economic factors along with political indicators as well.
- IMD is a **Swiss foundation**, based in Switzerland, dedicated to the development of international business executives at each stage of their careers.
- The IMD **World Competitiveness Yearbook (WCY)**, first published in 1989, is a comprehensive annual report and worldwide reference point on the competitiveness of countries.

### Key Highlights of the Report

- **Top Global Performers:**
  - **Europe:** Denmark has moved to the top of the 63-nation list from the third position last year, while Switzerland slipped from the top ranking to the second position and Singapore regained the third spot from fifth.
  - **Asia:** The top-performing Asian economies are

Singapore (3th), Hong Kong (5th), Taiwan (7th), China (17th) and Australia (19th).

- **Others:** Both Russia and Ukraine were not assessed in this year's edition due to the limited reliability of data collected.
- **India's Performance: Performance on four Parameters:**
  - **Economic performance:** It has improved from 37th in 2021 to 28th in 2022.
  - **Government efficiency:** It has improved from 46th in 2021 to 45th in 2022.
  - **Business efficiency:** It saw a huge improvement from 32nd rank in 2021 to 23rd in 2022.
  - **Infrastructure:** It on the other hand, saw no change at 49.

### ◎ ANALYSIS

#### How are rankings computed?

- The essential building block for the rankings is the **standardized value for all the criteria** (i.e., STD value).
- The first step is to compute the STD value for



each criterion using the data available for all the economies.

- Then they rank the economies based on the criteria that are used in the aggregation: **a combination of hard and survey data.**

### Reasons for India's Good Performance

- Major improvements in the context of retrospective taxes in 2021
- Re-regulation of a number of sectors, including drones, space and geo-spatial mapping.
- Significant improvement in the competitiveness of the Indian economy
- India as a driving force in the global movement to fight climate change and India's pledge of net-zero by 2070 at the COP26 summit also sits in harmony with its strength in environment-related technologies in the ranking.

### What are the recent steps taken by India to increase its Competitiveness?

- Towards Increasing Manufacturing Capacity:** India has made appreciable efforts to ensure resilience in manufacturing capacity such as via **Atmanirbhar Bharat** and **Make in India** initiatives which are aimed at domestic supply chains and heavy investment in manufacturing hubs.
- The government has introduced the Production-Linked Incentive (PLI) Scheme** in various sectors for enhancing India's manufacturing capabilities and exports.
- Technological Advancement:** To facilitate technological advancement for increasing competitiveness, India's Department of Telecom (DoT) has constituted six task forces on 6G technology.
- The **Ministry of External Affairs**, through its **New, Emerging And Strategic Technologies (NEST) division** is also ensuring India's active participation in international forums on technology governance.
- It acts as the nodal division within the ministry for issues pertaining to new and emerging technologies and assists in collaboration with foreign partners in the field of technology.

### India's strength

- The top five attractive factors of India's economy for business are –
  - A skilled workforce
  - Cost competitiveness
  - dynamism of the economy
  - high educational level
  - Open and positive attitudes

### Weaknesses

- The challenges that India faces include;
  - Managing trade disruptions and energy security
  - Maintaining high GDP growth post the pandemic
  - Skill development and employment generation
  - Asset monetisation and resource mobilisation for infrastructure development

### ◎ WAY FORWARD

- A nation that ensures balance between economic and social progress can enhance its productivity, followed by creating competitiveness and thus, prosperity.
  - Therefore, it is necessary to create an environment which not only pushes the businesses to compete successfully in local as well as international markets but ensures that the average citizen's standard of living also improves.
- Governments need to provide an environment characterized by efficient infrastructures, institutions and policies that encourage sustainable value creation by the enterprises.

### ◎ CONCLUSION

An economy's competitiveness cannot be reduced only to GDP and productivity because enterprises also have to cope with political, social and cultural dimensions. Governments therefore need to provide an environment characterized by efficient infrastructures, institutions and policies that encourage sustainable value creation by the enterprises.

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## CABINET APPROVES MEGA 5G AUCTION

### CONTEXT

The Union Cabinet has approved the auction of airwaves capable of offering fifth generation, or 5G, telecom services, including ultra-high-speed Internet, and gave its nod for setting up of captive 5G networks by big tech firms.

- ▣ The auction of over 72 GHz of the spectrum will be held by 2022 July-end.

### ◎ BACKGROUND

- Devices such as cell phones and wire line telephones require signals to connect from one end to another.
- These signals are carried on airwaves, which must be sent at designated frequencies to avoid any kind of interference.
- The **Union government** owns all the publicly available assets within the geographical boundaries of the country, which also include **airwaves**.
- With the expansion in the number of cell phone, wire line telephone and internet users, the need to provide more space for the signals arise from time to time.
- To sell these assets to companies willing to set up the required infrastructure to transport these waves from one end to another, the central government through the **DoT auctions these airwaves**.
- These airwaves are called **spectrum**, which is subdivided into bands which have varying frequencies.
- All these airwaves are sold for a certain period

of time, after which their validity lapses, which is generally set at **20 years**.

### 5G Spectrum

#### • About 5G Technology:

- It is the latest upgrade in the Long-Term Evolution (LTE) mobile broadband networks with reduced latency than 4G.
- 5G technologies offer an extremely low latency rate, the delay between the sending and receiving information.
- From 200 milliseconds for 4G, 5G brings it down to 1 millisecond (1ms).
- It works in three bands of the spectrum with their respective pros and cons.

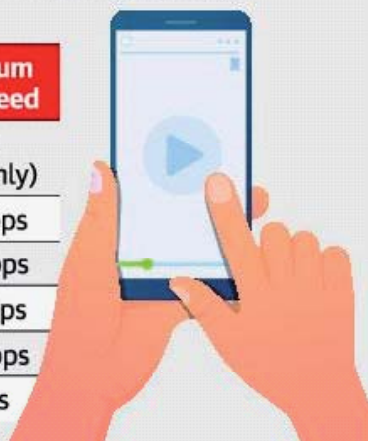
#### • Low Band Spectrum:

- It shows great promise in terms of coverage and speed of internet and data exchange with a maximum speed limited to 100 Mbps (Megabits per second).
- Telcos can use and install it for commercial

### Need for speed

A look at how 5G compares to previous technologies. 5G's maximum data speed is 10 times higher than the presently used 4G

Year	Generation	Maximum data speed
1979	1G	none (voice only)
1991	2G	14.4 Kbps
2000	2.5G	53.6 Kbps
2001	3G	384 Kbps
2010	4G	100 Mbps
2020	5G	1 Gbps



SOURCE: GRAPHIC NEWS

cellphone users who may not have specific demands for very high-speed internet.

- ▶ It may not be optimal for the specialised needs of the industry.

#### • **Mid-Band Spectrum:**

- ▶ It offers higher speeds compared to the low band but has limitations in terms of coverage area and penetration of signals.
- ▶ It may be used by industries and specialised factory units for building captive networks that can be molded into the needs of that particular industry.

#### • **High-Band Spectrum:**

- ▶ It offers the highest speed of all three bands, but has extremely limited coverage and signal penetration strength.
- ▶ Internet speeds have been tested to be as high as 20 Gbps (gigabits per second).

- **Importance:** Operators will use a combination of different spectrum bands to deliver 5G services, and it will play a critical role in determining the speed and range of coverage.

### **Benefits of 5G Technology:**

- **Healthcare:** Healthcare providers can create sensor networks to track patients and share information faster than ever before.
- **Public Safety:** A vast network and rapid response times mean that public works can respond to incidents and emergencies in seconds rather than minutes, and municipalities can react fast and with reduced costs.
- **Autonomous Vehicles:** 5G will allow vehicles to communicate between them and with infrastructure on the road, improving safety and alerting drivers to travel conditions and performance information.

#### **Regulating Body: Telecom Regulatory Authority of India (TRAI)**

- **Need:** The entry of private service providers brought with it the inevitable need for independent regulation.
- TRAI was, thus, established with effect from 20th February 1997 by an Act of Parliament, called the **Telecom Regulatory Authority of India Act, 1997**.
  - ▶ It was made to regulate telecom services, including fixation/revision of tariffs for telecom services which were earlier vested in the Central Government.

- ▶ TRAI's mission is to create and nurture conditions for growth of telecommunications in the country in a manner and at a pace which will enable India to play a leading role in emerging global information society.

- **Objective:** One of the main objectives of TRAI is to provide a fair and transparent policy environment which promotes a level playing field and facilitates fair competition.

- **Regulations issued:** In pursuance of above objective TRAI has issued from time to time a large number of regulations, orders and directives to deal with issues coming before it and provided the required direction to the evolution of Indian telecom market from a Government owned monopoly to a multi operator multi service open competitive market.

- **Role and functions:** The directions, orders and regulations issued cover a wide range of subjects including tariff, interconnection and quality of service as well as governance of the Authority.

- The TRAI Act was amended by an ordinance, effective from 24 January 2000, establishing a **Telecommunications Dispute Settlement and Appellate Tribunal (TDSAT)** to take over the adjudicatory and disputes functions from TRAI.

### **Global scenario**

- More than governments, global telecom companies have started building 5G networks and rolling it out to their customers on a trial basis.
- In countries like the US, some companies have taken the lead when it comes to rolling out commercial 5G for their users.
- A South Korean company, which had started researching on 5G technology way back in 2011, has, on the other hand, taken the lead when it comes to building the hardware for 5G networks for several companies.

### **Where does India stand in the 5G technology race?**

- On par with the global players, India had, in 2018, planned to start 5G services as soon as possible, with an aim to capitalize on the better network speeds and strength that the technology promised.
- Indian private telecom players have been urging the DoT to lay out a clear road map of spectrum allocation and 5G frequency bands so that they would be able to plan the rollout of their services

accordingly.

- One big hurdle, however, is the lack of flow of cash and adequate capital with some companies due to their AGR dues.

### Benefits for India after auction of 5G services

- **Revenue generation:** The auction process will generate revenue for the government as well as make companies to involve in contributing for societal benefits.
- **Less departmental burden:** Work load of technological advancements in every field has made the departments full with less time for other developmental projects.
- **Privatization of Infrastructure**

- **More Bidders availability**

- **More efficient services of 5G**

- **Better implementation:** The implementation of 5G technologies will now be included to rural areas also with the help of private players.

### ◎ CONCLUSION

The decision to auction spectrum by the government is determined by various factors- technological, regulatory as well as economic factors. It can be influenced by the prevailing policy conditions, advances in the technology, the conditions associated with auction and the price of the spectrum. The auction therefore can be graded successful or failure due to many attributes.

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# WATER RESOURCE MANAGEMENT IN INDIA

## CONTEXT

Bangladesh and India has agreed to boost cooperation in the areas of common rivers and water resource management.

### ◎ BACKGROUND

- India has only 4% of the World's freshwater, but 18% of the world's population.
- The main source of freshwater is the monsoon, with annual rainfall of approximately 4000 BCM (1 billion cubic meters), equivalent to 1170 mm of rainfall.
- Most of the Indian states depend upon monsoon for its water requirements. At the same time, some northern states have excess water, while some states such as Maharashtra, Tamil Nadu, and Rajasthan are short of water.
- In 1951, India's per capita water availability was 5177 cubic meters, but in 2011 it was reduced to 1545 cubic meters and is expected to decrease further to 1300 cubic meters by 2030.

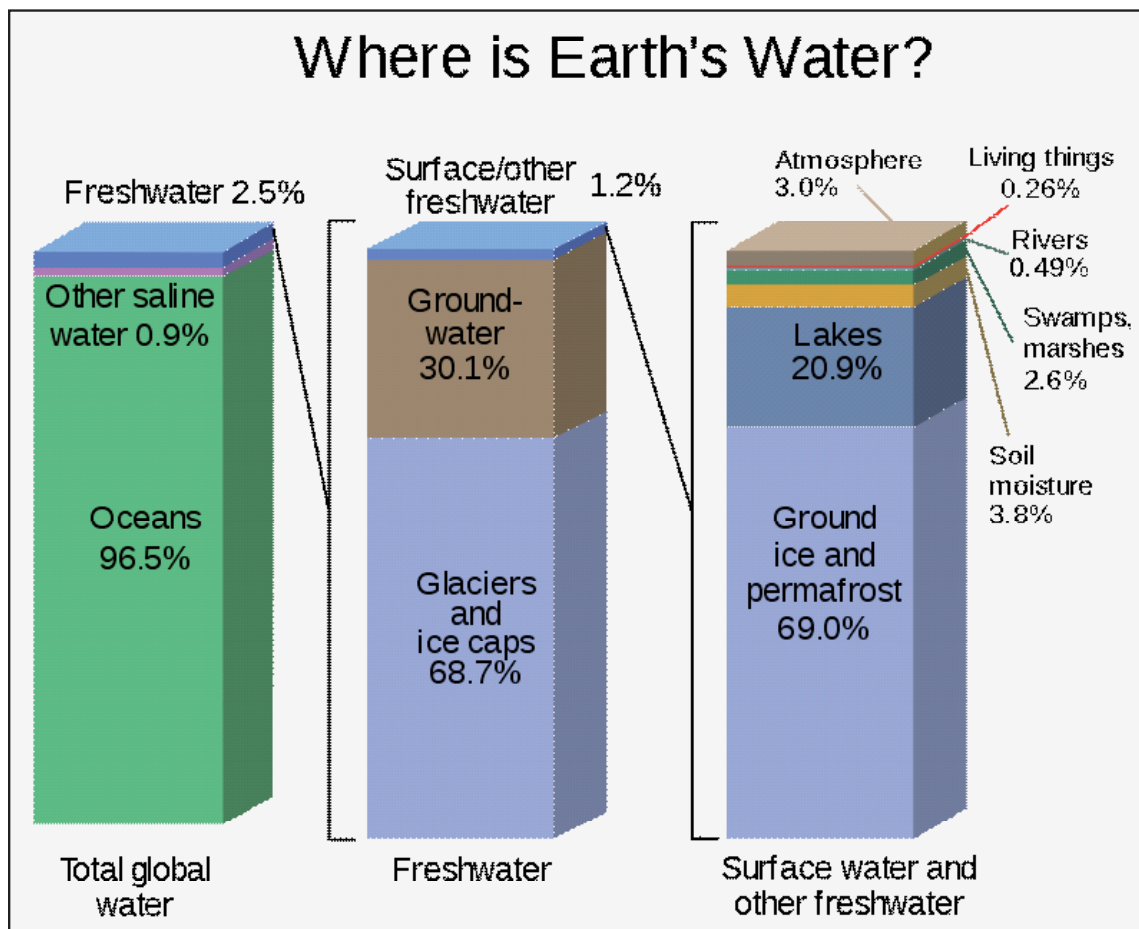
### ◎ ANALYSIS

#### What is water resource management?

- Water Resources Management (WRM) is the process of planning, developing, and managing water resources, in terms of both water quantity and quality, across all water uses.
- It includes the institutions, infrastructure, incentives, and information systems that support and guide water management.

#### What are major driving factors behind such vulnerability?

- Resource exploitation:** Excessive use of groundwater for irrigation in agriculture also puts pressure on resources.
- Consumption through agriculture:** India is one



of the world's leading agricultural producers, so it is also one of the countries with the highest water consumption of land and crops. The water source of is contaminated with biological pollutants. The amount of solid waste is also increasing in the waters of India.

- **Lack of traditional conservations methods:** The decline in traditional water reclamation areas, and the discharge of sewage and sewage into traditional waters, exacerbates the country's water scarcity situation.
- **Increasing Population:** The demand for water is further increasing due to the increase in demand due to population growth, industrialization and rapid urbanization.

### What are the major issues?

- **Freshwater shortage:** India's water demand depends primarily on the monsoon. Environmental changes and population growth are of concern, coupled with the general lack of long-term availability of water resources.
- **Unsafe and poor quality:** Despite improved drinking water, many other water sources are contaminated with both biological and chemical pollutants, with more than 21% of national illnesses associated with water. Also, only 33% of the country has access to traditional hygiene. This makes clean drinking water unavailable and jeopardizes the health of Indians.
- **Groundwater Stress:** Many rural communities in India around urban sprawl also have no choice but to drill wells to access groundwater sources. There is no easy answer for India, which needs to develop water sources for food and human consumption, but India's overall water availability is very tense.
- **Demographic Needs:** Children in 100 million households across the country are short of water and every one in two children is malnourished. Environmental justice needs to be restored in India so that families can raise their children with dignity. Providing water to the community is one way to ensure that opportunity.
- **Corruption and Lack of Planning:** India's water crisis is often blamed on lack of government planning, increased privatization of businesses, industrial and human waste, and government corruption.

### Improvements in Water resource management

- Water availability does not depend solely on ecological conditions. The river was tamed, managed and managed here to serve the economy, people and states. However, management and exploitation (i.e., management patterns of

these rivers) have created social and economic inequalities, and sometimes even dramatic ecological consequences.

- **Corporate social/Environmental responsibility:** Due to heightened tensions at various levels, government agencies are new to water management to better integrate stakeholders and users in different countries, regions and regions of the agricultural, industrial and drinking water sectors.
- **Integrated water management:** The new approach needs to focus on integrated water management, which is closely related to river basins. Water flows according to the nature of river's regime and earth's topography and does not respect administrative boundaries, so water must be managed in an integrated, science-based manner.
- **Harvesting techniques:** Most water is moved or dried instead of being used, so a rainwater harvesting program needs to be devised and implemented. The collected water can be used immediately for agriculture and can be consumed immediately by humans with improved filtration methods to reduce aquatic pathogens.
- **Eliminate the root causes:** Rather than relying on quick fixes based on flawed logic, city and state agencies need to focus on addressing the root of the problem. Depletion of reservoirs in general, especially deterioration of water table. Government regulations are needed to limit the amount of groundwater that households can extract. This water should be weighed and priced.

#### Other government measures

- River basin planning
- Interlinking of Rivers
- Watershed management program
  - PM Krishi Sinchai Yojana
  - Neeranchal Watershed Management

### CONCLUSION

The most important crops of India — rice, wheat and sugarcane, are the most water consuming crops. Rice which is a major export crop consumes about 3,500 liters of water for a kilogram of grain produced. Further with constant population increase and depletion in water resources water management will increasingly become more difficult in future. The picture of the same is visible in precipitating crisis of water in southern states. Water management needs to be the central focus of efforts in the agriculture sector and the environment improvement.

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# **SECTION: B**

## **(PRELIMS)**

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### **CURRENT AFFAIRS**

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## NEW MAP OF EARTH'S TECTONIC PLATES

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◎ **CONTEXT:** Researchers have carried out a new study that includes an updated map of the earth's tectonic plates.

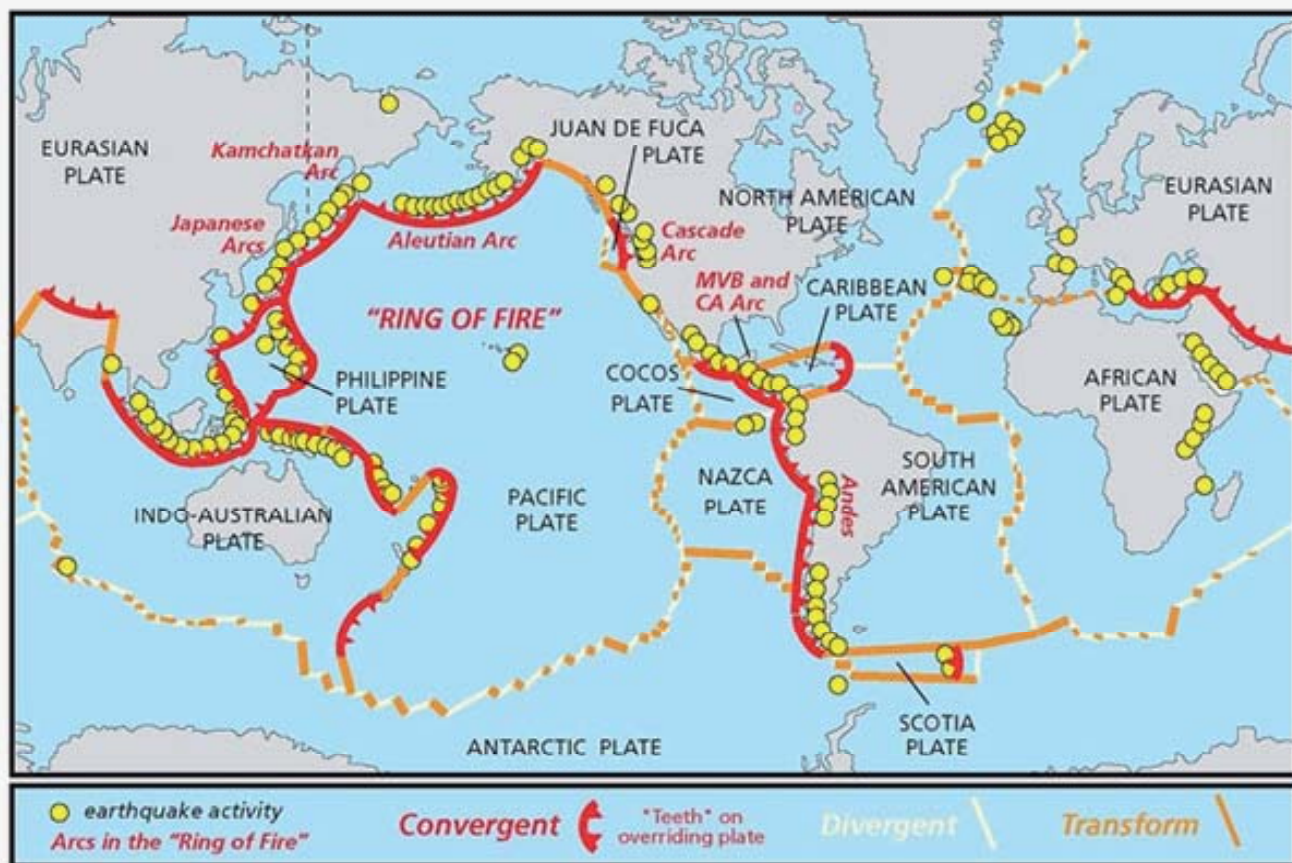
- It sheds light on how past continents were formed by tectonic movements; new micro plates have been added with existing plates.

◎ **BACKGROUND:** Background

- The plate models are used to evaluate risks from natural hazards whereas the province model can be used for further exploration of minerals and the orogeny model for a better understanding of the evolution of the earth.
- There is a need for re- mapping the tectonic plate boundaries to redefine the present day movements and plate behaviour.
- The last study regarding the maps were done in 2003.

### What is plate tectonics?

- In plate tectonics the outermost part of the Earth – the crust and uppermost mantle – are viewed as acting as a single mechanical layer, the lithosphere.
- The lithosphere is divided into separate “plates” that move relative to each other on the underlying, relatively weak asthenosphere in a process ultimately driven by the continuous loss of heat from the Earth's interior.
- There are **three main types of plate boundaries**:
  - Divergent, where plates move apart from each other and new lithosphere is formed in the process of sea-floor spreading;
  - Transform, where plates slide past each other, and
  - Convergent, where plates converge and lithosphere is “consumed” by the process of subduction.
- This is a list of the **15 major tectonic plates**:
  - African Plate
  - Antarctic Plate
  - Arabian Plate
  - Australian Plate
  - Caribbean Plate
  - Cocos Plate
  - Eurasian Plate
  - Indian Plate
  - Juan de Fuca Plate
  - Nazca Plate
  - North American Plate
  - Pacific Plate
  - Philippine Plate
  - Scotia Plate
  - South American Plate



### New Vs Old Model of Mapping

- The new model for tectonic plates better explains the spatial distribution of 90 per cent of earthquakes and 80 per cent of volcanoes from the past two million years whereas existing models only capture 65 per cent of earthquakes.
- The continents were assembled a few pieces at a time, a bit like a jigsaw.
- But each time the puzzle was finished, it was cut up and reorganised to produce a new picture. The study helps illuminate the various components so geologists can piece together the previous images.
- The researchers combined three models to map the new geological provinces and tectonic plates:
  - A plate model based on the existing knowledge of tectonic plates
  - A province model based on the geological information of the earth's surface
  - An orogeny model based on the process of mountain formation which is triggered when two tectonic plates collide.
- There **are 26 orogenies** (the process of mountain formation) that have left an imprint on the present-day architecture of the crust.
- Many of these are related to the formation of supercontinents.
- The new study added several new microplates to the existing tectonic plate model like the Macquarie microplate which sits south of Tasmania and the Capricorn microplate that separates the Indian and Australian plates.
- The biggest update to the existing plate model has been in western North America. The newly delineated boundary is much wider, approximately 1,500 km, than the previously drawn narrow zone.
- The other large change is in central Asia. The new model now includes all the deformation zones **north of India** as the plate bulldozes its way into Eurasia.

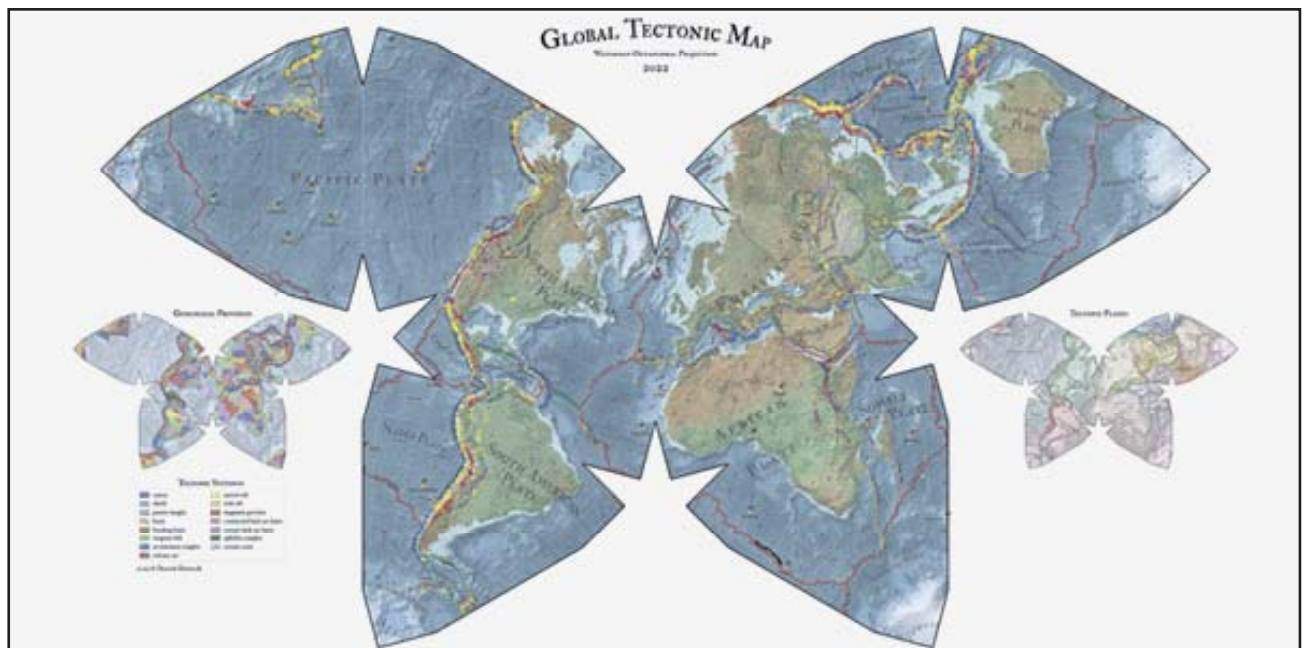


Fig. The New Mapping

## WHAT WEST SETI POWER PROJECT CAN MEAN FOR INDIA-NEPAL TIES

### ◎ **CONTEXT:**

India will be taking over an ambitious hydropower project in Nepal, West Seti, nearly four years after China withdrew from it.

### **About:**

- The Government of Nepal has decided to hand over the agreement of the 750-megawatt (MW) West Seti Hydropower Project and 308 MW SR6 Storage Hydroelectric Project to India's National Hydro Power Company Limited (NHPC).
- West Seti is a 750MW hydro power project.
- It is planned on West Seti river/basin in Seti, Nepal.



**Six decade wait:**

- West Seti Hydropower Project, which is to be built on the Seti River in far-western Nepal, has remained on the drawing board for the last six decades.
- China's Three Gorges Corporation had informed the Nepal Government in August 2018 that it would not be able to execute the 750-MW West Seti Hydropower Project.
- Prior to that, the Snowy Mountain Engineering Corporation (SMEC) had been refused renewal of its licence following its failure to begin the work "convincingly" during an entire decade from the mid-1990s.
- The Australian company had been given a generation licence for 30 years under a Build, Own, Operate and Transfer (BOOT) scheme.

**India -Nepal power relations:**

- Nepal is rich in power sources with around 6,000 rivers and an estimated potential for 83,000 MW. India has formally approached Nepal on many occasions.
- India is viewed as a feasible market for Nepal, but there has been some uncertainty in Nepal over India's inability to deliver projects on time. India has undertaken to harness or expressed intent to harness major rivers in the north.
- An ambitious Mahakali treaty was signed back in 1996, to produce 6,480 MW, but India has still not been able to come out with the Detailed project Report.
- The Upper Karnali project, for which the multinational GMR signed the contract, has not made any headway for years.
- West Seti, therefore, has the potential to be a defining model for Nepal India's power relations in future.

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## A CLOSER LOOK AT THE REUTERS INSTITUTE DIGITAL NEWS REPORT 2022

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**◎ CONTEXT:**

**According to the 2022 Reuters Institute Digital News Report, trust in news is falling in nearly half the countries surveyed, with significant proportions of the public, especially younger age groups, beginning to turn away from news.**

**About the report:**

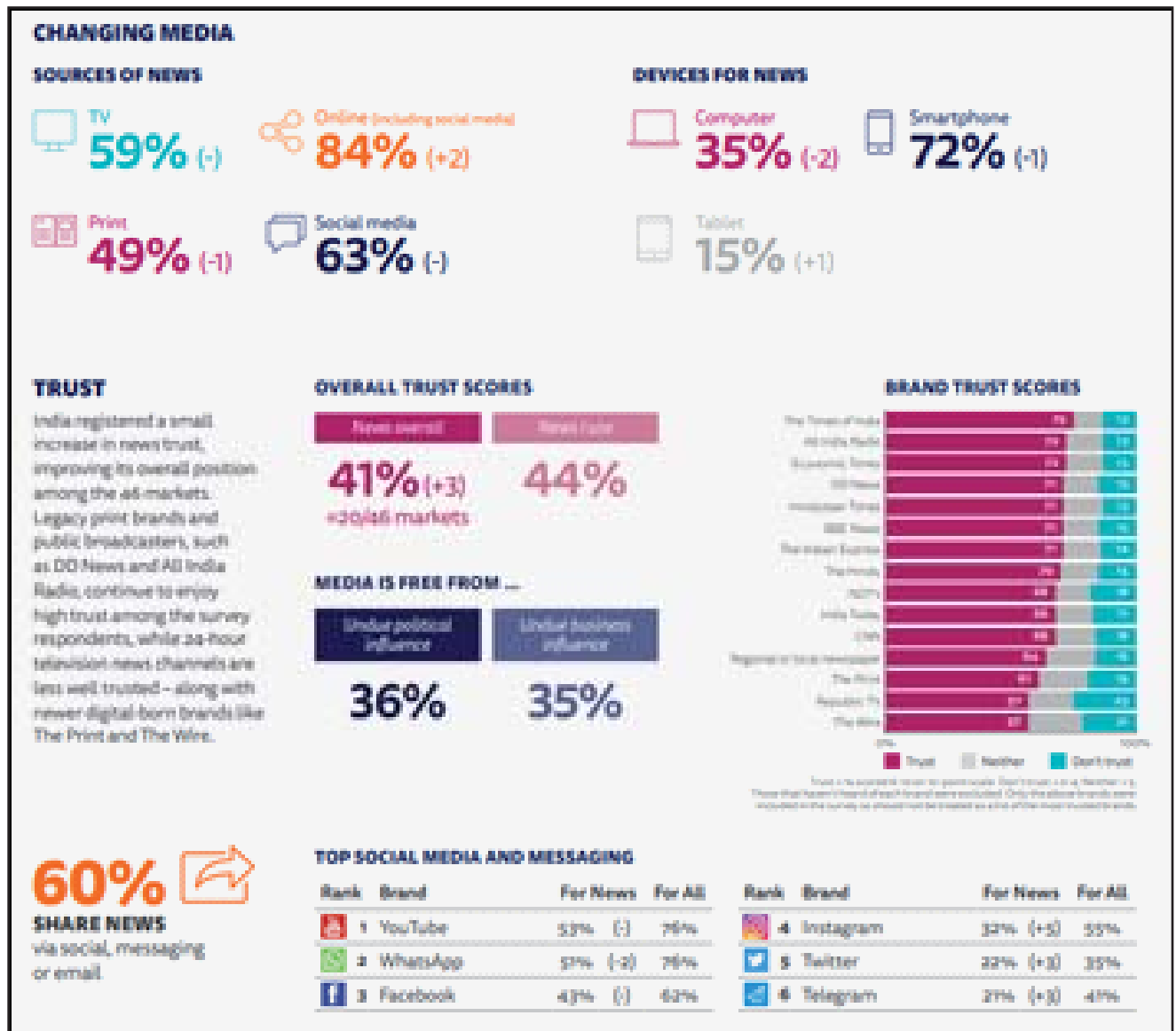
- It is an annual report commissioned by the Reuters Institute for the Study of Journalism, which tracks how news is consumed in different countries.
- The 2022 report (11th edition) is based on a survey (online questionnaires), covering 46 markets in six continents.
- Because it is based on online questionnaires, the results may not be nationally representative, particularly in countries with low internet penetration.
- The 2022 report flags six major trends which could have wider socio-political implications.

**Key findings of the Digital News Report**

- People are trusting news content less and less.
- Consumption of traditional news media declined in nearly all the countries surveyed.
- The proportion of news consumers who say that they "avoid news" has risen sharply across countries with the report describing the phenomenon as "selective avoidance".
- Despite small increases in the proportion of people willing to pay for online news (mostly in richer countries), the growth in digital subscriptions for news content seems to be levelling off.

- Smartphones have become the dominant way in which most people first access news in the morning.
- Facebook remained the most-used social network for news. But it is TikTok that has become the fastest-growing network. However, TikTok is currently banned in India.

### Key findings about India:



- In India, the **data is more representative of younger English speakers rather than the general population**.
- India saw a slight increase in trust, with **41% trusting news in general**.
- The top social media platforms for sourcing news were **YouTube (53%) and WhatsApp (51%)**.
- India is a **heavily mobile-focused market**, with **72% of survey respondents accessing news via smartphones** and 35% via computers.
- In addition, **84% of Indian respondents got their news from the internet**, 63% from social media, 59% from television and 49% from print.



# NEW MATERNAL NUTRITION SCHEME LAUNCHED IN GUJARAT

◎ **CONTEXT:** Two maternal nutrition schemes have been launched by the Prime Minister in Gujarat as 'Mukhyamantri Matrushakti Yojana' and 'Poshan Sudha Yojana'.

◎ **ABOUT:**

## Key Highlights of the scheme

- **Objective:** To provide nutritious food to **pregnant and lactating women** and their **new born children** during the first **1000 days**.
- **Scope:** It is a pilot project **for 10 talukas of five tribal dominated**
- **Fund allocation:** **800 crores** will be spent under the scheme.
- **Components:** Under this scheme, pregnant and lactating mothers, free of cost, will be given:
  - Two kg gram
  - One kg tur dal
  - One kg edible oil
- It will be distributed every month from the Anganwadi centers.
- **Extended to tribal districts:** The scheme has been extended up to **14 tribal dominated districts**, which will help tribal women to curb from maternal mortality and Infant mortality in the state.
- Under this, they provide **iron and calcium tablets** to pregnant and lactating mothers of tribal districts and to educate them on nutrition.
- **Mandate for benefits:** Under this scheme, pregnant and lactating mothers **registered in Anganwadis** are provided complete **nutritious food**.

### What is maternal mortality and Infant mortality Rate?

- Maternal Mortality Ratio (MMR) is defined as the number of maternal deaths during a given time per 1,00,000 live births during the same time.
- **Causes of MMR:** The major causes for maternal mortality are
  - severe bleeding
  - infections
  - high blood pressure during pregnancy
  - anaemia
  - complications from delivery, and unsafe abortions
- Seven Indian states have very high maternal mortality: Rajasthan, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Bihar, Odisha and Assam.
- **Infant Mortality Rate (IMR):** This rate for a region is calculated by dividing the number of deaths of children less than **1 year old** by the number of live births in a **year times 1000**.

### Impact of poor maternal health

- **Malnutrition and Anemia** during pregnancy can hinder the development of the foetus and the health of the baby can deteriorate.
- **Spread of diseases:** Diseases like Uterus cancer, Haemorrhage, Infections and even loss of life can be experienced if proper care is not taken during or after pregnancy.
- **Lack of nutrition and unhealthy livelihood** is major reason for most of the deaths recorded after giving birth.



**Precautions to be taken**

- Proper **Hygiene and Sanitation** is important.
- **Nutritious food** during and after pregnancy is must.
- Nutrition supplements like **Iron Folic Tablets and Calcium tablets** can help to recover from Anemia and Weakness.

**Other Central scheme for Maternal Health and children**

- **Janani Suraksha Yojana** under the National Health Mission to link cash assistance to institutional deliveries
- The **Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA)** provides a fixed day for assured, comprehensive and quality antenatal care free of cost to pregnant women on 9th of every month
- **Pradhan Mantri Matru Vandana Yojana**
- **Poshan Abhiyan**
- LaQshya Guidelines
- SUMAIV- Surakshit Matritva Aashwasan
- Reproductive, Maternal, New-born, Child and Adolescent Health (RMNCH+A) framework

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## BALIKA PANCHAYAT

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**◎ CONTEXT:**

**Gujarat is the first state in the country to launch Balika Panchayat.**

**Balika Panchayat:**

- The initiative aims to promote the **social and political development of the girls** and ensure their active participation in politics.
- It is a new initiative has been started in **Kutch** under **Beti Bachao Beti Padhao**.
  - The main objective of panchayat is that the girls should move forward in politics.
  - In Balika panchayat, the member is **nominated just like Gram panchayat**.
- This initiative has been taken by the **Women and Child Development Welfare Department of the Gujarat Government** under the 'Beti Bachao Beti Padhao' campaign.
- 'Balika Panchayat' is managed by people in the **11-21 age group and its main objective is to promote the social and political development of the girl** child and to remove the evil practices from the society such as child marriage, and the dowry system.

**Significance:**

- It focuses on **women- led development** instead of women's development.
- It's a **replicable model** for other states where child marriage is prevalent or girls education is on the decline.
- Balika Panchayat have **made girls vocal**, which is proven by the Gujarat model.

### ALL-FEMALE AFFAIR

- Members of 'Balika Panchayat' will be elected from six wards
- This is the first-ever election of this kind
- Six members have been unanimously elected uncontested
- Contestants are young females aged between 10 and 21 years
- Post of sarpanch will be a contest between four candidates
- Aims to develop leadership qualities in girls for future Panchayat polls



#### HOW DID THE IDEA COME ABOUT?

**T**his idea of Balika Panchayat came from a gram sabha meeting that was organized to discuss a cricket tournament for boys. The girls raised demands that some form of activity should be done for the girls too. "I read in the newspapers that in foreign countries there is a concept of youth parliament/forum. From there we have taken this concept. We will provide a separate sitting arrangement to these elected girls in the Panchayat building and we will give them to use the budget of gender sensitivity for the development work they choose to do," said village chief, Suresh Chhanga

## USE OF ICT IN SCHOOL EDUCATION IN INDIA RECEIVES UNESCO'S RECOGNITION

### ◎ CONTEXT:

The Central Institute of Educational Technology (CIET), part of National Council for Educational Research and Training (NCERT) of the Ministry of Education (MoE), Government of India, has been awarded UNESCO's King Hamad Bin Isa Al-Khalifa Prize for the Use of ICT in Education for 2021.

#### About:

- The Ministry of Education initiative to **use ICT under the "PM eVidya" scheme** during the Covid pandemic has won UNESCO's recognition.
- The CIET was proactive in bringing learning to children's doorsteps.
  - These efforts were especially helpful in pandemic situations, when schools were closed, in reaching out to students.
  - These efforts helped in arresting the learning hiatus to a large extent.
- It used 12 PM eVidya DTH TV channels and nearly 397 radio stations, including community radio stations under the PM eVidya program.

#### PM eVIDYA:

- The PM eVIDYA was **initiated as part of Atmanirbhar Bharat Abhiyan by the Ministry of Education in 2020.**

- It unifies all efforts related to digital/online/on-air education to enable multi-mode access for imparting education by using technology to minimise learning losses.

### UNESCO's King Hamad Bin Isa Al-Khalifa Prize

- It was **established in 2005** with the support of the Kingdom of Bahrain.
- The Prize rewards individuals and organizations that are implementing outstanding projects and promoting the creative use of technologies to enhance learning, teaching and overall educational performance in the digital age.
- An **international Jury selects the two best projects** annually.
- Each prize winner receives **USD 25,000, a medal and a diploma** during a ceremony at UNESCO Headquarters in Paris.
- This award recognizes **innovative approaches** to leveraging new technologies to expand educational and lifelong learning opportunities for all, in line with the 2030 Agenda for sustainable development and its goal 4 on Education.

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## INDIA BACKS CHINA'S PLAN FOR JOINT BORDER ACTIVITY

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### ◎ CONTEXT:

India has supported an initiative by China for all SCO (Shanghai Cooperation Organization) member states, including Russia, Pakistan and Central Asian countries, to conduct "joint border operations" in 2023.

### About:

- India has supported an initiative by China to conduct a "joint border operation" in 2023 of all member countries of SCO
- The border operation called "Solidarity-2023" will be organised by China
- The Border Security Force (BSF) hosted the 21st meeting of Experts' Group and Border Security Conference of SCO countries
- At the meeting participants exchanged information reflecting assessments of the situation on the State borders of the SCO member states, trends and forecasts of its development.
- The results of the Joint Border Operation "Solidarity-2019-2021" carried out in 2021 by the border services of the competent authorities of the SCO member states were discussed and highly appreciated.
- The plan for the preparation and conduct of the Joint Border Operation "Friendship Border – 2022, this year was reviewed and approved.

### What is SCO?

- The SCO is an economic and security grouping and has emerged as one of the largest trans-regional international organisations to ensure security and maintain stability across the vast Eurasian region.
- The member-states of SCO:
  - Russia,
  - China,
  - India,
  - Pakistan,
  - Kyrgyz Republic,

- Kazakhstan,
- Tajikistan and
- Uzbekistan

**The main objectives of the SCO are to:**

- strengthen relations among member states
- promote cooperation in political affairs, economics and trade, scientific-technical, cultural, and educational spheres as well as in energy, transportation, tourism, and environmental protection;
- safeguard regional peace, security, and stability
- create a democratic, equitable international political and economic order

## FATF DECISION ON REMOVING PAKISTAN FROM GREY LIST BY OCTOBER

◎ **CONTEXT:**

Ahead of the plenary session of the Financial Action Task Force (FATF), the global financial crime watchdog, from June 14 to 17 in Berlin, Pakistan which continues to face an economic crunch, is hoping for some respite in the form of its removal from the FATF's 'grey list' or the list of countries presenting a risk to the global financial system.

**What is the FATF?**

- International watchdog for financial crimes -The Financial Action Task Force is an international watchdog for financial crimes such as money laundering and terror financing.
- Address loopholes in the global financial system -It was established at the G7 Summit of 1989 in Paris to address loopholes in the global financial system after member countries raised concerns about growing money laundering activities.
- Sets standards or recommendations for countries -The FATF sets standards or recommendations for countries to achieve in order to plug the holes in their financial systems and make them less vulnerable to illegal financial activities.

**What are FATF's 'grey' and 'black' lists?**

- Reason for the list- While the words 'grey' and 'black' list do not exist in the official FATF lexicon, they designate countries that need to work on complying with FATF directives and those who are noncompliant, respectively.
- Grey list- The grey countries are designated as "jurisdictions under increased monitoring", working with the FATF to counter criminal financial activities. For such countries, the watchdog does not tell other members to carry out due diligence measures visavis the listed country but does tell them to consider the risks such countries possess. Currently, 23 countries including Pakistan are on the grey list.
- Black list- As for the black list, it means countries designated as 'high risk jurisdictions subject to call for action'. In this case, the countries have considerable deficiencies in their AML/CFT (anti money laundering and counter terrorist financing) regimens and the body calls on members and nonmembers to apply enhanced due diligence. In the most serious cases, members are told to apply countermeasures such as sanctions on the listed countries. Currently, North Korea and Iran are on the black list.

### Why is Pakistan on the grey list?

- **Terror Financing**- Pakistan was retained on the grey list in March as it was yet to address concerns on the front of terror financing investigations and prosecutions targeting senior leaders and commanders of UN designated terrorist groups.
- **Progression so far**-It was taken off the list in 2015 owing to its progress but was put back on it in 2018. It was given a 27point action plan to restrict terror financing activities. After warnings and two deadline extensions on the first plan, Pakistan was prescribed another sevenpoint action plan by the APG in 2021.
- **Current situation**- Pakistan is currently banking on its potential exclusion from the grey list to help improve the status of tough negotiations with the International Monetary Fund to get bailout money.

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## COAL INDIA EXPLORES GREEN MINING BETS

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### ◎ CONTEXT:

**Coal India Ltd (CIL) recently said that it is looking at green mining options to lessen any adverse environmental impact by leveraging a slew of eco-friendly technologies in both underground and open cast mining.**

#### About:

- The state-run miner is exploring the feasibility of sharply ramping up its underground mining production to 100 million tonnes (MT) by FY30 from 25.6 MT in FY22. Underground mining is minimally invasive on land degradation.
- Around 70% of the country's coal reserves are conducive for underground mining.

#### What is green technology?

- Green technology refers to technology that limits or reverses the effects of human activity on the planet.
- In mining, green technology refers to technology that will reduce carbon emissions in operations and mitigate adverse environmental impacts.
- It includes the use of minerals and metals that support a transition to low-carbon technologies such as solar panels or wind power.

#### How does technology impact mining operations?

- Technology can have a number of impacts on mining operations, including safety and productivity, environmental protection and opportunities for women.
- Safer working conditions through improved underground communication, automation, more sophisticated mineral and metal transportation, and emergency response measures are achieved by integrating technology into mining projects.

#### How can developing countries improve environmental sustainability through tech in mining?

- Developing countries often receive foreign direct investment for large-scale mining operations.
- This foreign investment is arriving with more technology to increase productivity during the mining concession period.
- Governments need to remain up to date in the latest innovations and changes brought to their jurisdictions to ensure that increased productivity comes with balanced with economic and social benefits over the life of the mine.

**About Coal India Limited (CIL):**

- Coal India Limited (CIL) the state-owned coal mining corporate came into being in November 1975.
- With a modest production of 79 Million Tonnes (MTs) at the year of its inception CIL, today is the single largest coal producer in the world and one of the largest corporate employer.
- Indian Institute of Coal Management (IICM) as a state-of-the-art Management Training 'Centre of Excellence', the largest Corporate Training Institute in India operates under CIL and conducts multi-disciplinary programmes.
- CIL is a Maharatna company is a privileged status conferred by the Government of India to select state-owned enterprises in order to empower them to expand their operations and emerge as global giants.

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## THERE IS A DESERT IN TAMIL NADU AND THE DUNES ARE RED

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**◎ CONTEXT:**

**A Small desert in the state of Tamil Nadu's Thoothukudi district has been identified, that consists of red sand dunes.**

- **The colour of these dunes says about the regions geological history and its semi-arid climate.**

**◎ ABOUT:****What are dunes?**

- A dune is a landform composed of wind- or water-driven sand.
- It typically takes the form of a mound, ridge, or hill and occurs in different shapes and sizes.
- Dunes are made of sand-sized particles, and may consist of quartz, calcium carbonate, snow, gypsum, or other materials.
- Dunes are most common in **desert environments**, where the lack of moisture hinders the growth of vegetation that would otherwise interfere with the development of dunes.
- However, sand deposits are not restricted to deserts, and dunes are also found along sea shores, along streams in semiarid climates, in areas of glacial outwash, and in other areas where poorly cemented sandstone.



### About Red dunes

- The red dunes are called *theri* in Tamil.
- They consist of sediments dating back to the Quaternary Period and are made of marine deposits.
- They have very low water and nutrient retention capacity and are susceptible to aerodynamic lift.
- The iron-rich heavy minerals like ilmenite, magnetite, garnet, hypersthene and rutile present in the soil.
- They had undergone leaching by surface water and were then oxidised because of the favourable semi-arid climatic conditions.

### Significance

- **Helps in studying rocks:** The lithology of the area shows that the area might have been a **paleo (ancient) coast** in the past.
- The presence of limestone in many places indicates **marine transgression**.
- **Ancient Coastal evidences:** The present-day *theri* might have been formed by the confinement of beach sand locally. These are geological formations that appeared in a period of a few hundred years.

### How they are formed?

- The red sand is brought from the surface of a broad belt of red loam in the plains of the Nanguneri region) by **south west monsoon winds** during **May-September**.
- The south west monsoon winds, after draining the moisture behind the Mahendragiri hill and the **Aralvaimozhi gap** of the Western Ghats become dry and strike the plains in the foothills, where vegetation is sparse.
- Deforestation and absence of vegetative cover in the **Aralvaimozhi gap** and the Nanguneri plains are considered to be the major causes of wind erosion.
- Hence the fine materials with light weight are picked up, suspended in the air and carried away.
- These processes of erosion, transport and deposit of sediments that are caused by wind at or near the surface of the earth, are called **Aeolian processes**.
- They lead to continual sand redistribution. The sand deposited thus also forms a further obstruction, causing more sand to be deposited and the process goes on.

### Concerns

- **Illegal sand mining** in the region is prevalent due to high mineral and fine grained sand.

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## NICOTINE RISES GRADUALLY IN BRAIN

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### ◎ CONTEXT:

A recent study had showed how cigarette smokers kicked the habit spontaneously after they suffered a brain stroke or injury.

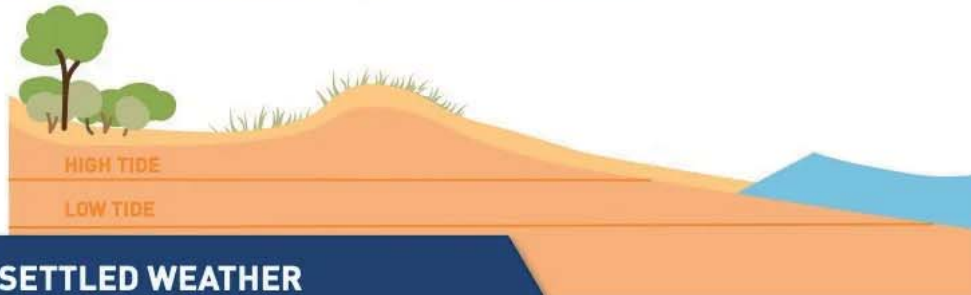
- It shows effects to map regions in the brain that control addiction of any kind.

### Background

- Nicotine is an alkaloid that is found in certain plants, such as the **Nicotiana tabacum** plant that is used to **produce tobacco products**.

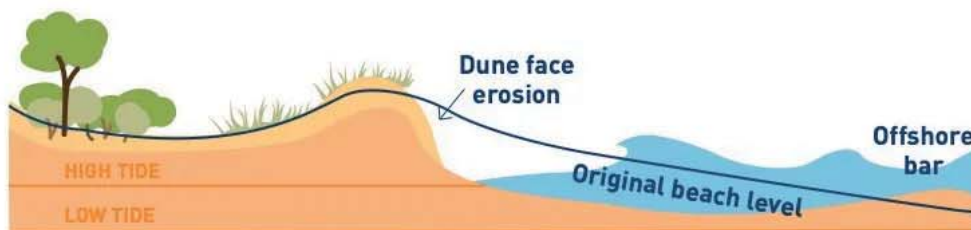
## THE SAND DUNE LIFECYCLE

- Dunes protect and support the environment where we live, work and play.
- It's important they continue to stand strong between us and the sea.
- We can help by **staying off the dunes** and only using the marked public tracks with blue posts.



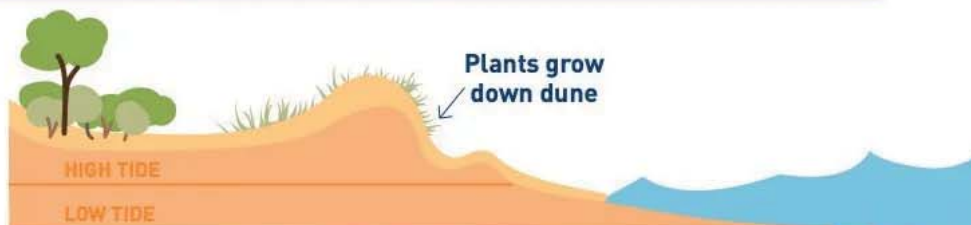
### SETTLED WEATHER

Sand builds up on the beach and dunes.



### STORM EROSION

Waves erode the beach and dune, eroded sand forms an offshore bar.



### POST-STORM BEACH RECOVERY

Sand moves onshore and rebuilds the beach.  
Dune plants grow seaward down the eroded dune face.



### POST-STORM DUNE RECOVERY

Dune plants trap sand, gradually rebuilding the dune.

- Nicotine dependence is a chronic, relapsing disease defined as a compulsive craving to use the drug, despite social consequences, loss of control over drug intake, and emergence of withdrawal symptoms.
- **Tolerance** is another component of drug dependence.
- The most commonly used tobacco product is **cigarettes**, but all forms of tobacco use can cause dependence.
- Nicotine dependence is a serious **public health problem** because it leads to continued tobacco use and is one of the leading preventable causes of death worldwide, causing more than **8 million deaths per year**.

### How Brain Networks are linked with Nicotine dependence?

- Repeated exposure to nicotine can cause an increase in the number of **nicotinic receptors**, which is believed to be a result of receptor desensitization and subsequent receptor upregulation.
- This upregulation or increase in the number of nicotinic receptors significantly alters the functioning of the brain reward system.
- When these receptors are not occupied by nicotine, they are believed to produce **withdrawal symptoms**.
- These symptoms can include **cravings for nicotine, anger, irritability, anxiety, depression, impatience, trouble sleeping, restlessness, hunger, weight gain, and difficulty concentrating**.
- **Neuroplasticity** within the brain's reward system occurs as a result of **long-term nicotine use, leading to nicotine dependence**.
- There are genetic risk factors for developing dependence also.

### What is Neuroplasticity?

- Neuroplasticity, also known as neural plasticity, or brain plasticity, is the ability of neural networks in the brain to change through **growth and reorganization**.
- It is when the brain is rewired to function in some way that differs from how it previously functioned.
- These changes range from individual neuron pathways making new connections, to systematic adjustments like cortical remapping.
- Examples of neuroplasticity include circuit and network changes that result from learning a new ability, environmental influences, practice, and psychological stress.

### Concern with Nicotine

- Nicotine dependence results in substantial mortality, morbidity, and socio-economic impacts.

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## INDIA'S FIRST DARK SKY RESERVE TO SOON COME UP IN LADAKH

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◎ **CONTEXT:** The Hanle in Ladakh is all set to become India's first Dark Sky Reserve.

- The site is going to promote astronomy-tourism, giving a boost to local tourism through science.

◎ **ABOUT:** What is a dark-sky reserve (DSR)?

- A **dark-sky Reserve (DSR)** is an area, usually surrounding a park or observatory that restricts **artificial light pollution**.



- The International Dark-Sky Association (IDA) is associated with the International Dark Sky Reserve (IDSR) and International Dark Sky Park (IDSP).
- An **International Dark-Sky Association (IDA)** was founded in 1988 to reserve **public or private land** for an exquisite outlook of nocturnal territories and **starry night skies**.
- In 1993, Michigan became the first state in the **United States** to designate a tract of land as a "**Dark Sky Reserve**" at the Lake Hudson State Recreation Area.
- It is generally understood that a dark-sky reserve, should be sufficiently dark to promote astronomy.
- However, this is not always the case. The lighting protocol for a dark-sky reserve is based on the sensitivity of wildlife to **artificial light at night**.

### What is the objective of these reserves?

- The purpose of the dark-sky movement is generally to promote astronomy.
- However, astronomy is certainly not the only objective of conserving a dark sky.
- A dark night sky is associated with so many facets of history, philosophy, religion, societal development, poetry, song, mathematics, and science.
- The preservation of a DSR is necessary to understand our environmental history.

### India's first site for dark reserve

- A part of **Changthang Wildlife Sanctuary** at Hanle in Ladakh is all set to become India's first Dark Sky Reserve.
- The site will also promote **astronomy tourism**, giving a boost to local tourism through science.
- The reason for selecting site for the programme:
- Ladakh holds great potential for undertaking uninterrupted astronomical observations.
- At a height of 4,500 metres, Hanle is already home to optical, gamma ray and infrared telescopes for Space exploration.
- It is pristine for the dry weather for most months of the year, remains cloudless during nights and offers dark skies, making it a perfect natural setup for sky gazing.

**About the Hanle Dark Sky reserve (HDSR)**

- The HDSR will be an area spanning **22 km** in radius centred around the Hanle observatory.
- Both **locals and tourists both** have to follow regulations that will be imposed on the outdoor lighting, use of high beam vehicle headlights, light shields and curtains, among other measures to cut down light pollution.
- Under the observatory the **administration, local council members along with the scientists** will collectively work towards preservation of the night sky from unwanted light pollution and illumination.

## CHINA LAUNCHES THIRD AIRCRAFT CARRIER IN MAJOR MILITARY MILESTONE

◎ **CONTEXT:** China recently launched its third aircraft carrier, the country's most advanced.

**About:**

- China's **first aircraft carrier, the Liaoning**, was a refit of the Soviet-era ship commissioned in 2012, followed by the indigenously **built 2nd aircraft carrier Shandong in 2019**.
  - China plans to have around five aircraft carriers.
- The aircraft carrier named Fujian was launched at a brief ceremony held at Shanghai's Jiangnan Shipyard.
- The Fujian is China's first domestically designed and built catapult aircraft carrier.
  - The launch was delayed by two months due to the COVID lockdown of Shanghai.
- The third aircraft carrier built by China State Shipbuilding Corporation Limited has a displacement of more than 80,000 tonnes and is equipped with electromagnetic catapults and arresting devices.
- The Fujian, which is the "**first fully domestically developed and constructed**" aircraft carrier with an **electromagnetic aircraft launch system (EMALS)**, has a flat, straight flight deck and arresting device.
  - It has a full displacement of more than 80,000 tonnes, as much as 20,000 tonnes more than the other two aircraft carriers.
  - Fujian is the name of China's eastern coastal province of Fujian.





# CHINA TO ADOPT GENETICALLY MODIFIED MAIZE AND SOY

◎ **CONTEXT:** The Chinese National Crop Variety Approval Committee cleared the path for cultivating genetically modified (GM) crops.

## About:

- China released two standards that clear the path for the cultivation of genetically-modified (GM) crops in China.
- In China, GM crop varieties need to receive both a safety certificate and a "variety approval" before they can be commercially cultivated.
- Various genetically modified maize and soybean varieties have received the safety certificate since 2019.
- But none has yet received variety approval due to the absence of standards. Now these are available, the approval and commercialisation of such GM crops are on the horizon.

## Impact of such a move:

- **Improvement in yields:** The change in regulations would potentially lead to an improvement in yields. This is aligned with China's ambition of becoming self-sufficient in essential grains and oilseeds in the coming years. There are specific targets in products like pork, where the country wants to produce 95% of its consumption by 2025.
- **Pressure on global prices:** China is one of the world's largest maize and soybean importers. The country accounted for 13% of global maize imports in 2021 and roughly 60% of the world's soybean imports. Reducing import volumes is likely to lead to downward pressure on global prices.
- **Impact on South Africa:** It will have an impact on the long-term growth of the South Africa's agricultural sector. South Africa is a net exporter of maize, and increase in production in other parts of the world could bring increased competition and downward pressure on prices in the medium term.
- **Positive impact on consumers:** A reduction in the global maize and soybeans prices would be positive for consumers and the livestock and poultry sectors.

## GM Crops:

- A GM or transgenic crop is a plant that has a novel combination of genetic material obtained through the use of modern biotechnology.
- For example, a GM crop can contain a gene(s) that has been artificially inserted instead of the plant acquiring it through pollination.

## What are the potential benefits of GM Plants?

In the developed world, there is clear evidence that the use of GM crops has resulted in significant benefits. These include:

- Higher crop yields
- Reduced farm costs
- Increased farm profit
- Safer environment
- More nutritious food



**How are GM Crops made?**

- GM crops are made through a process known as genetic engineering.
- Genes of commercial interest are transferred from one organism to another.
- Two primary methods currently exist for introducing transgenes into plant genomes:-
  - The first involves a device called a 'gene gun'. The DNA to be introduced into the plant cells is coated onto tiny particles of gold or tungsten. These particles are then physically shot onto plant cells and incorporated into the genomic DNA of the recipient plant.
  - The second method uses a bacterium to introduce the gene(s) of interest into the plant DNA.

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## FIRST GRASSROOTS INNOVATION-BASED STANDARDS FORMULATED BY BUREAU OF INDIAN STANDARDS

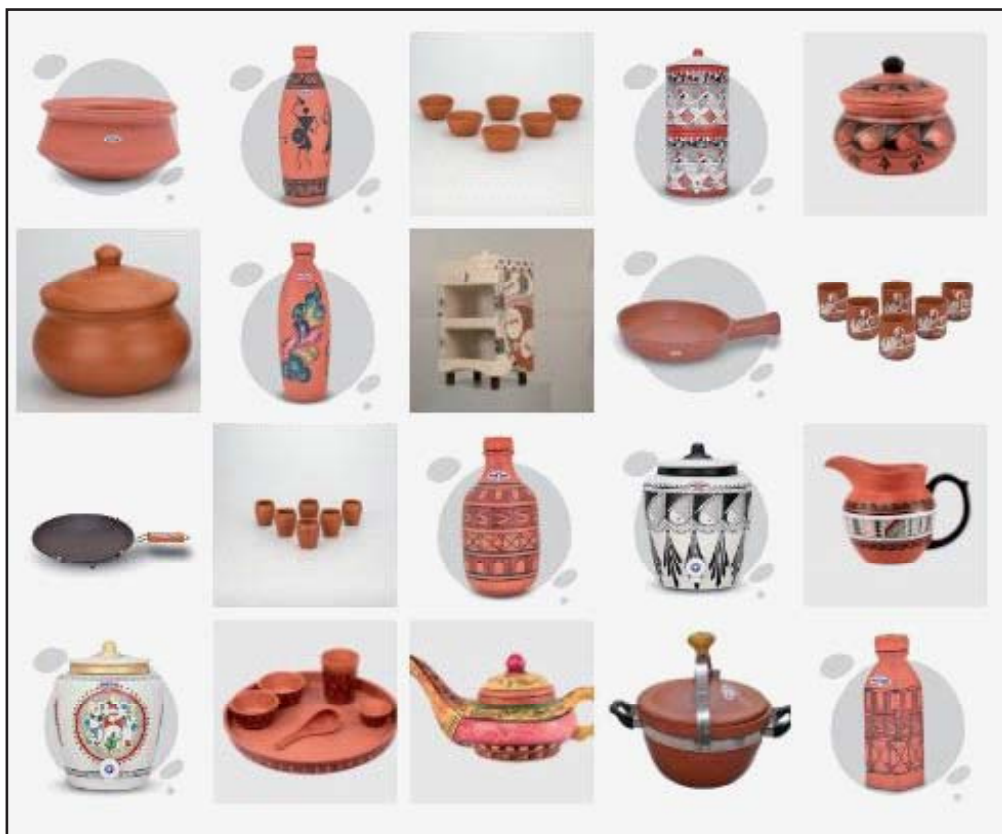
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**◎ CONTEXT:**

The first official standard for a grassroots innovation has been set up for clay cooling cabinet "Mitticool".

**Non-electric cooling cabinet:**

- It has been developed by **Mansukhbhai Prajapati, from Wankaner, from Gujarat.**



- The IS 17693: 2022 - given to the non-electric cooling cabinet made of clay is the first standard rooted in a grassroots innovation - 'Mitticool Refrigerator'.
- The **standard set up by the Bureau of India Standards is necessary after a particular stage for scaling up and entering the cross-border markets.**
- The standard specifies the **construction and performance requirements** of a cooling cabinet of the natural refrigerator made out of clay which operates on the principle of evaporative cooling.
- These cabinets may be **used to store perishable foodstuff** without the need of electricity.
- It provides a **natural coldness to foodstuffs** so that they remain fresh without deteriorating their quality.
- The standard can help grassroots innovations march hand-in-hand with innovations in the formal sector.

### Significance:

- The standard helps in the endeavour of BIS to fulfil 6 of out 17 United Nations Sustainable Development Goals (SDGs), namely 1 (No poverty), 2 (Zero hunger), 5 (Gender equality), 7 (Affordable and clean energy), 9 (Industry, innovation, and infrastructure), and 12 (Responsible consumption and production).

### Impact:

- The impact of the 'Mitticool Refrigerator' has already been exponential, and it is poised to grow by attaining this significant milestone of setting standards.
- It is already playing a lead role in:
  - reviving the pottery culture, tradition, and heritage;
  - connecting people back to roots in better,
  - healthier ways;
  - promoting sustainable consumption;
  - economically empowering the indigent community;
  - working towards green and cool earth, economic development and employment generation; and
  - contributing towards rural women upliftment and making them financially independent

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## 'COSMIC CANNIBALISM'

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### ◎ CONTEXT:

Astronomers have observed a phenomenon, called, "cosmic cannibalism," a dead star is ripping apart its planetary system.

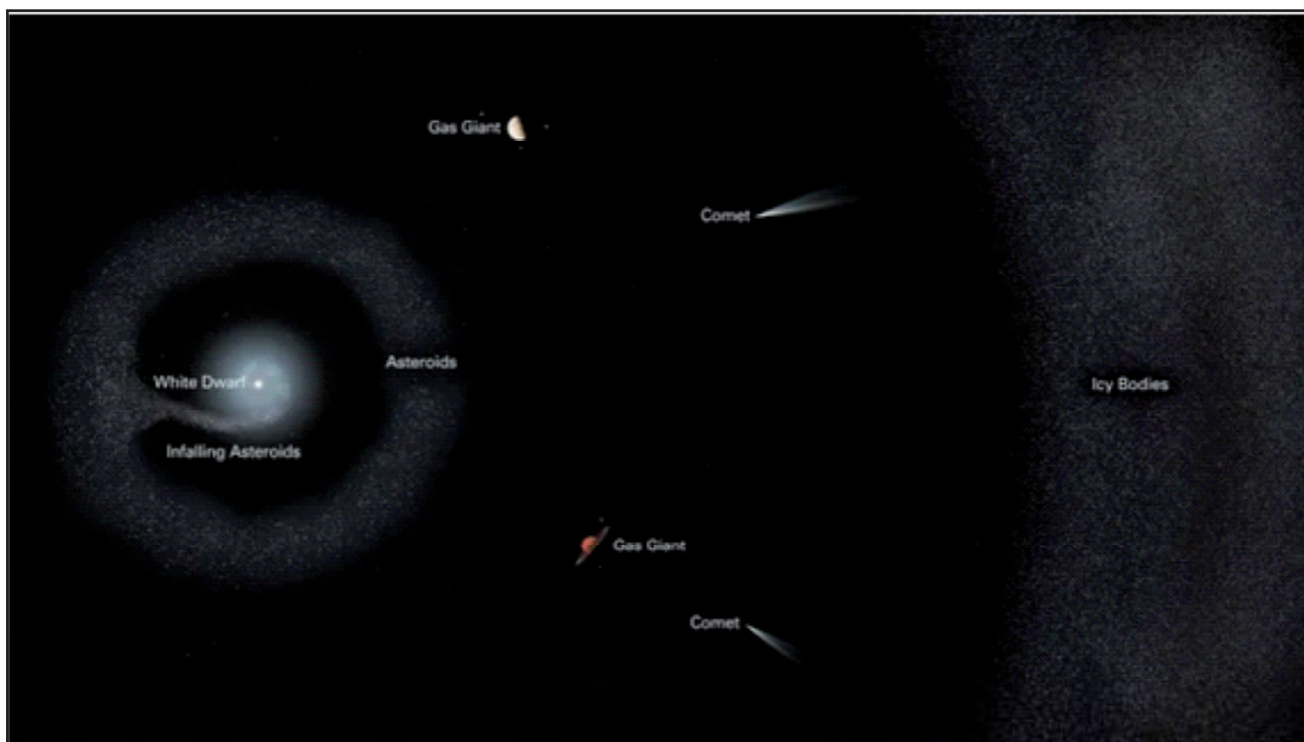
### About:

- A **white dwarf is ripping up an entire planetary system** with its death throes.
- A **star is ending its life** so violently that the dead star left behind, called a white dwarf, is disrupting an entire planetary system by sucking in debris from both its inner and outer reaches.
- This **cosmic phenomenon is the first time that astronomers have observed.**
- The **white dwarf star is consuming the rock-metallic** and icy material, both of which are the "ingredients of planets".

- This case of cosmic cannibalism was diagnosed with the help of archival data from the Hubble Space Telescope and other NASA observatories.
- The researchers obtained the findings based on the analysis of material captured by the atmosphere of the nearby **white dwarf star G238-44**.

### White Dwarf:

- A white dwarf is formed when a **low-mass star like our sun exhausts most of its nuclear fuel**.
- It is usually **very dense** and about the size of a planet.
- They are dense, **dim, stellar corpses** — the last observable stage of evolution for low- and medium-mass stars.
- Compared to our sun, a white dwarf has a similar carbon and oxygen mass though it is much smaller in size — similar to Earth.
- White dwarf temperatures can exceed 100,000 Kelvin according to NASA (that's about 179,500 degrees Fahrenheit).
  - Despite these sweltering temperatures, white dwarfs have a low luminosity as they're so small in size.



This illustrated diagram of the planetary system G238-44 traces its destruction. The tiny white dwarf star is at the center of the action. A very faint accretion disk is made up of the pieces of shattered bodies falling onto the white dwarf. The remaining asteroids and planetary bodies make up a reservoir of material surrounding the star. Larger gas giant planets may still exist in the system. Much farther out is a belt of icy bodies such as comets, which also ultimately feed the dead star.  
Credit: NASA, ESA, Joseph Olmsted (STScI)

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**SECTION: C**  
**(QUIK BYTE)**

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**CURRENT AFFAIRS**

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## USE OF DRONES IN PLANTING TREES

### ◎ CONTEXT:

- In a bid to increase the 'green space', a whopping 11 lakh seeds are set to be sown on the hillocks abutting the Rayalacheruvu tank, 20 km south of Tirupati, Andhra Pradesh.
- This initiative is with the aim of planting trees in the Dry areas in the region.

### What is a Seed ball?

- Seed ball is a seed wrapped in clay with some nutrients like coco peat, or moss.
- It is a man-made method to spread colonies of trees and plants by broadcasting seeds after giving them protection of clay and an additional dose of nutrients.
- In humid and conducive conditions, the seed balls sprout. They are dried before they are sprinkled. They are also known as seed bombs.
- Seed bombing is a farming technique of introducing vegetation to a land by throwing or dropping the seed balls.





**Global practice**

- They are used extensively in the US, Thailand, Kenya and other African countries to grow plantation.

**Benefits of Seed Ball:**

- Increase green space
- Effective for inaccessible places
- Safe method
- Sustainable method
- Increase Tourism
- Help to curb climate change
- Provide ground for research and development

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## LUMPY SKIN DISEASE IN ANIMALS

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**◎ CONTEXT:**

**Some 1,229 cattle across five districts of Gujarat have been infected with Lumpy Skin Disease (LSD), an infectious viral disease.**

**Background**

- LSD is endemic to Africa and parts of West Asia, where it was first discovered in 1929.
- In Southeast Asia the first case of LSD was reported in Bangladesh in July 2019.
- In India, which has the world's highest 303 million heads of cattle, the disease has spread to 15 states within just 16 months.
- In India it was first reported from Mayurbhanj, Odisha in August 2019.

**Key Points**

- Cause: The LSD is caused by infection of cattle or water buffalo with the poxvirus Lumpy skin disease virus (LSDV).
  - The virus is one of three closely related species within the genus capripoxvirus, the other two species being Sheep pox virus and Goat pox virus.



**Symptoms:**

- It appears as nodules of two to five centimetre diameter all over the body, particularly around the head, neck, limbs, udder (mammary gland of female cattle) and genitals.
- The lumps gradually open up like large and deep wounds.
- Other clinical signs include general malaise, ocular and nasal discharge, fever, and sudden decrease in milk production.

**Effect:**

- According to the Food and Agriculture Organization (FAO) the mortality rate is less than 10%.
- Vectors:
- It spreads through mosquitoes, flies and ticks and also through saliva and contaminated water and food.

**Prevention:**

- Control and prevention of lumpy skin disease relies on four tactics - movement control (quarantine), vaccination, slaughter campaigns and management strategies.

**Treatment:**

- There is no treatment for the virus, so prevention by vaccination is the most effective means of control.
- Secondary infections in the skin may be treated with Non-Steroidal Anti-Inflammatories (NSAIDs) and also antibiotics when appropriate.

**Implications:**

- This will have a devastating impact on the country, where most dairy farmers are either landless or marginal landholders and milk is among the cheapest protein sources.

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## AFRICAN SNAILS TURN A MENACE

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**◎ CONTEXT:**

- **Farmers of Kerala's Idukki district abandoned cultivation as African snail species destroys crops.**
- **Inadequate monsoon and improper cleaning works during the pandemic had intensified their habitation in the region.**

**◎ ABOUT:****Important facts about the species**

- The Giant African Snail *Achatina fulica* is an exotic pest introduced from East Africa to India in 1847 itself.
- This is the biggest land snail having a protective shell, measuring about 19 cm in length.
- This snail is a hermaphrodite and lays 50-200 yellowish eggs on soil surface.
- Hatching takes place in about a week's period and the young ones grow up to a year and reach sexual maturity.
- The life span of this snail is 3-5 years. And those hatching towards the end of rainy season take a long time to mature as they undergo hibernation and aestivation for up to two years without food.

- It can cause Eosinophilic meningitis in Humans.



#### How does it cause menace?

- It is very active during monsoon, nocturnal in behaviour and damages crops like papaya, brinjal, beans, okra, cole crops, areca nut, rubber buds, coffee seedlings, orchids, etc.
- The snail eats the leaves, stems, fruits and flowers of host plants causing severe damage to the young saplings especially in nurseries.
- It also contaminates leafy vegetables with its excrement.

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## FIRST BHARAT GAURAV TRAIN TO RUN FROM JUNE 21<sup>st</sup>

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### © CONTEXT:

The Indian Railways' Southern Railway zone began the maiden service of privately-run Bharat Gaurav Trains.

#### Key-features

- Route: The Bharat Gaurav Train from Coimbatore North to Sainagar Shirdi with stoppages at Tiruppur, Erode, Salem, Yelahanka, Dharmavaram, Mantralayam Road and Wadi.
- There will be a Doctor on board to attend any emergency.
- There are Private securities engaged along with the Railway Police Force to protect the train from any kind of harm.
- There will be on board electricians and AC Mechanic and Fire and Safety Officers.
- The train is maintained by branded housekeeping service providers who will clean the utility areas on frequent intervals and the caterers are experienced and rich in holding the traditional vegetarian menus.
- The coaches are fitted with high bass-sounding speakers and an on-rail Radio Jockey to keep the passengers entertained during the journey. There will be devotional songs, spiritual stories and live interviews to keep the journey pleasant.
- **Completely Toxic-free and Smoke-free**

#### About the Bharat Gaurav Trains

- Indian Railways had launched the operation of theme-based Bharat Gaurav train in the month of November 2021.

- Under this Scheme, theme-based tourist circuit trains, on the lines of the Ramayana Express, can be run either by private or State-owned operators.
- The objective of this theme is to showcase India's rich cultural heritage and magnificent historical places to the people of India and the world, through Bharat Gaurav Trains.
- This scheme also aims to leverage the core strengths of the professionals of the tourism sector to run theme-based trains to tap the vast tourist potential of India.

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## MAWSYNRAM SETS NEW JUNE RAINFALL RECORD AT 1003 MM IN 24 HOURS

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### ◎ CONTEXT:

**Meghalaya's Mawsynram, the world's wettest place, rewrote its June rainfall records held since 1940.**

#### About:

- The 24-hour rainfall recorded recently was a whopping 1003.6mm, surpassing the previous record of 945.4mm of 1966.
- The second closest rainfall record was held by nearby Cherrapunji, another wet place, where the 24-hour rainfall was 972mm.

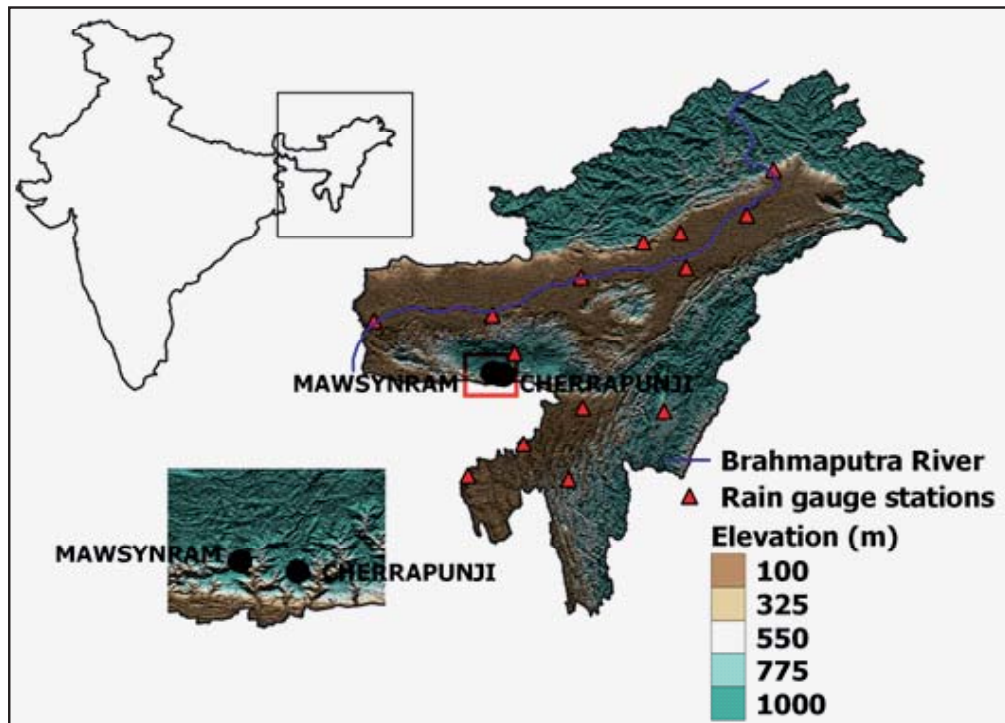
#### About Mawsynram:

- Mawsynram is situated in East Khasi Hill district of Meghalaya, 15 km west of Cherrapunji, Mawsynram is 1400 m above sea level.
- The 'Maw' in Mawsynram is a Khasi word which means 'stone', thus referring to certain megaliths found in the Khasi Hill area.
  - The village is most famous for the gigantic formation of a stalagmite, which resembles the shape of a 'shivling'.
- With 11,872 mm of rainfall received annually, Mawsynram beats Cherrapunji by a slender margin.
  - Cherrapunji receives 11,777 mm of rainfall.
- The rains are so intense in Mawsynram that the villagers use thick grass to sound-proof their huts from the deafening rain.
- The women of Mawsynram use rain covers known as 'knups', using bamboo slivers, plastic sheets and broom grass to create a rain shield that resembles a turtle shell, which is then worn on the head.
  - The knups are large enough to keep rain off the whole body right up to the knees.
- Meteorologists believe Mawsynram's location plays a huge part in it receiving huge amount of rainfall.
- Moisture gathers over the Bay of Bengal, it causes precipitation over Mawsynram, leading to a heavy and very long monsoon season.

#### Rainfall at Mawsynram:

- Since northeast India is mostly hilly and is an extension of the Indo-Gangetic Plains, the region is highly sensitive to changes in regional and global climate.
- Pre-monsoon and monsoon are the rainy seasons of northeast India.
- Rain-bearing summer air currents (the Bay of Bengal branch of monsoons) that move north from Bangladesh's hot and humid floodplains hit the funnel-shaped relief of the Meghalaya hills with deep valleys and gorges.

- The steep parallel mountains (Garo, Khasi and Jaintia hills) in Meghalaya block the movement of the clouds to the north
- They are squeezed in through the gorges and then forced to ascend the steep slopes and shed most of their rainfall in the region.



#### About knups:

- Knups are made from banana leaves lashed to a frame of bamboo.
- They are worn rather than carried, which allows you to use your hands. And if you lean into the wind, they won't blow inside out, or away.
- Knups are the traditional umbrellas of Northeastern India, and are here being used in the wettest place on earth, Mawsynram, which has over 38 feet of rain a year.



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## ADP TO BE EXTENDED TO BLOCK, CITY LEVEL: PM

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◎ **CONTEXT:** The PM has hoped to extend the Aspirational District Programme (ADP) to block and city levels.

### About Aspirational Districts Programme (ADP)

- The Programme was launched in January 2018.
- Objectives: The 'Transformation of Aspirational Districts' initiative aims to remove heterogeneity through a mass movement to quickly and effectively transform these districts.
- The broad contours of the program are Convergence (of Central & State Schemes), Collaboration (of Central, State level 'Prabhari' Officers & District Collectors), and Competition among districts driven by a spirit of mass Movement.
- With States as the main drivers, this program will focus on the strength of each district, identify low-hanging fruits for immediate improvement, measure progress, and rank districts.

### ■ The three core principles of the programme are:

- Convergence of Central & State Schemes, which brings together the horizontal and vertical tiers of the government.
- Collaboration among citizens and functionaries of Central & State Governments, including district teams. This will enable impactful partnerships between government, market, and civil society.
- Competition among districts driven by a spirit of the mass movement.

### Selection of districts

- A total of 117 Aspirational districts have been identified by NITI Aayog based upon composite indicators.
- The objective of the program is to monitor the real-time progress of aspirational districts based on 49 indicators (81 data points) from the 5 identified thematic areas.
- Each district is ranked based on 49 performance indicators identified across the 5 core themes. This includes-
  - Health & Nutrition (30% weightage)
  - Education (30% weightage)
  - Agriculture & Water Resources (20% weightage)
  - Financial Inclusion & Skill Development (10%)
  - Basic Infrastructure (10%)

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## HOW MARINE HEATWAVE FUELLED SUPER CYCLONE AMPHAN

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◎ **CONTEXT:** A new study has suggested that warm subsurface waters in the Bay of Bengal likely helped fuel the 2020 Amphan super cyclone.



**Marine heatwaves:**

- First described in 2011: The term “marine heatwave” was initially used to describe an extreme surface warming event off the west coast of Australia during 2010-11 austral summer.
- Marine heatwaves like The Blob has resulted in mass mortalities in marine mammals and birds, and collapse of fisheries and aquaculture in the US, Korea, etc.
- Marine heatwaves are periods of extremely high temperatures in the ocean (above the 90th percentile).
- These events cause marine habitat destruction due to coral bleaching, seagrass destruction, and loss of kelp forests, affecting the fisheries sector adversely.

**■ Impact on the Monsoon**

- The marine heatwaves in the western Indian Ocean and the Bay of Bengal are found to result in dry conditions over the central Indian subcontinent.
- There is an increase in rainfall over south peninsular India in response to the heatwaves in the Bay.

**What causes marine heatwaves?**

- Marine heatwaves can be caused by a whole range of factors, and not all factors are important for each event.
- The most common drivers of marine heatwaves include ocean currents which can build up areas of warm water and air-sea heat flux, or warming through the ocean surface from the atmosphere.
- Winds can enhance or suppress the warming in a marine heatwave, and climate models like El Niño can change the likelihood of events occurring in certain regions.

**Trends:**

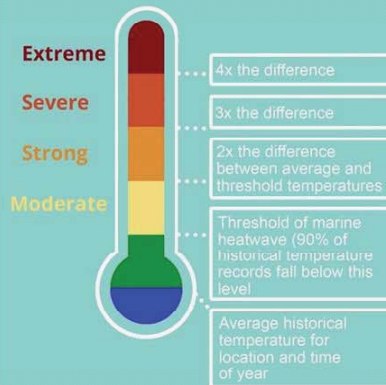
- Bay of Bengal recorded surface temperatures of 32-34°C, before Cyclone Amphan.
- 93% of the heat from global warming goes into the oceans.
  - Warm waters are an energy source for cyclones.
- As the Arabian Sea warms, the number and intensity of cyclones and heavy rains increase.
- Over the Arabian Sea,
  - 150% rise in the number of very severe cyclones
  - 80% rise in the total duration of cyclones
  - 20%-40% rise in the intensity of cyclones Over the Bay of Bengal, rapid intensification may be occurring more.

**Key findings about Marine heatwave and Cyclone:**

- The heat content in the subsurface ranged between 135 and 150 kilojoules per square centimetre before the cyclone.
- Warm subsurface waters could intensify cyclones by allowing heat to flow between the sea and atmosphere. Warmer waters fuel cyclones.
- The subsurface water may have warmed because of the high sea level anomaly, which is the difference between the total and average sea level.
- An increase in sea level is brought about by anticyclonic eddies, which is a circular movement of water.



# THE IMPACT OF MARINE HEATWAVES ON SOCIETY

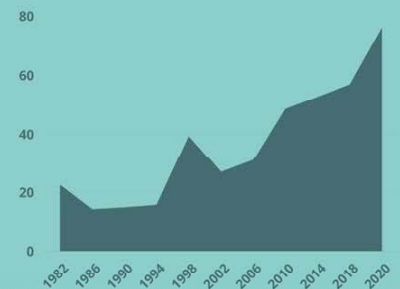


## WHAT ARE MARINE HEATWAVES?

Marine heatwaves occur when ocean temperatures are extremely warm – much warmer than expected for the location and time of year – for an extended period of time (5 days or more). They can occur at any time of year and often have significant impacts on marine ecosystems and industries.

Marine heatwaves have become longer and more frequent over recent decades as the oceans have absorbed excess heat from the atmosphere and become significantly warmer.

## GLOBALLY AVERAGED NUMBER OF ANNUAL MARINE HEATWAVE DAYS



## SOME IMPACTS OF MARINE HEATWAVES



2003 - Mass mortalities of at least 25 different marine species.



2010 - Bleaching and mass mortalities of coral in South East Asia. Between \$49 and 74 million loss in tourism.



2011 - Mass mortality of seagrass in Shark Bay, a UNESCO world heritage site. Between 2 and 9 Tg CO<sub>2</sub> released back into the atmosphere - equivalent to the amount of CO<sub>2</sub> released by a small developing country in a year.



2015 - Closure of recreational clam fishery. \$40 million USD loss in tourist spending.



2012 - \$38 million USD loss to commercial fisheries.

BUT fisheries managers implemented quotas to reduce early lobster landings during a subsequent marine heatwave in 2016. This resulted in a \$108 million USD gain to commercial fisheries.



2016-2017 - mass mortality of farmed salmon. \$800 million USD export loss to aquaculture industry.

## WHAT DOES THE FUTURE HOLD?

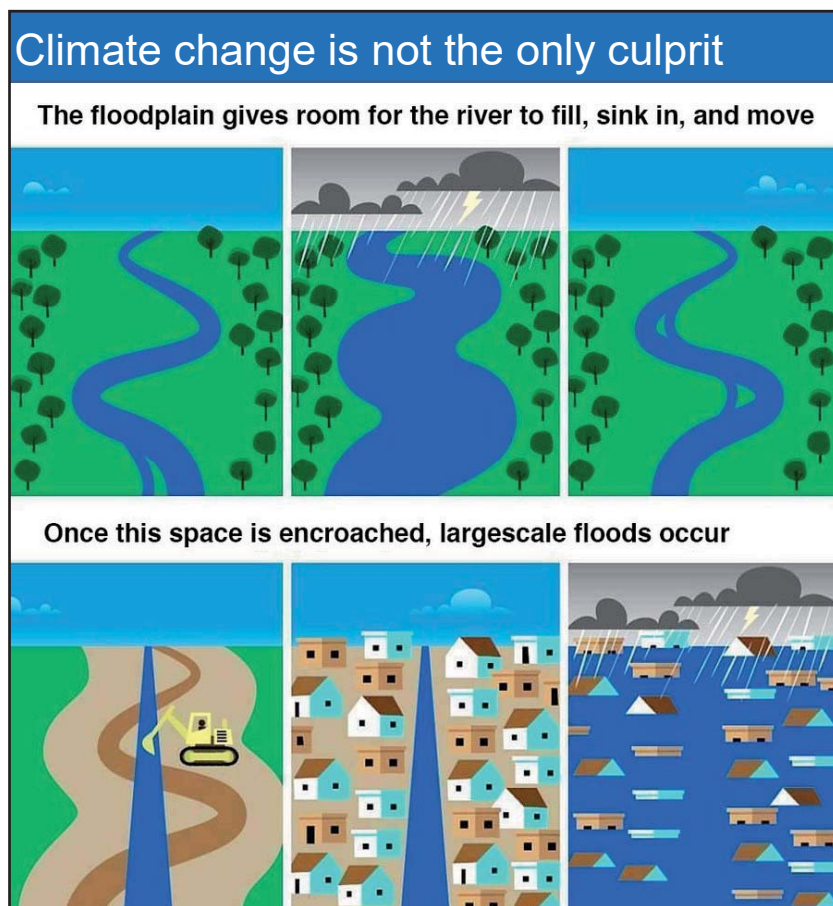
Ultimately, without improved global action to tackle climate change, the oceans will continue to warm leading to more intense and frequent MHWs, further impacting marine ecosystems.

In the short term, societies will need to adapt to a warmer world to better manage human-ocean interactions.

K. E. Smith et al., *Science* 374, eabj3593 (2021).

[Link to paper](#)





## NEW SPECIES OF BAMBOO-DWELLING BAT FOUND IN MEGHALAYA

### ◎ CONTEXT:

A team of scientists has discovered a new species of thick-thumbed bat from a bamboo forest in Meghalaya and named it after the state, which is celebrating its 50 years of statehood.

### Key-highlights of the new species

- The scientists have named the new species as *Glischropus meghalayanus* in honour of the state from where it was discovered and also in celebration of the 50th anniversary of statehood of Meghalaya in 2022.
- The new species is reported from a bamboo forest near Lailad in Ri-Bhoi district in Meghalaya, which is adjoining to Nongkhylllem Wildlife Sanctuary.
- This genus *Glischropus* (thick thumb bat) is the first report from South Asia; the only new discovery from India in over a decade.
- The discovery of *Glischropus meghalayanus* from a forest patch adjacent to Nongkhylllem Wildlife Sanctuary from where another specialized bamboo-dwelling species (*Eudiscopus denticulus*) was reported recently also underscore the importance of the area from a conservation point of view.
- With this new discovery, the total number of bat species known from India stands at 131 species with Meghalaya harbouring the highest bat diversity in any Indian state with 67 species.

**Bat species in India**

- The bat is something of a chimera: it has wings like a bird, the furry face of a mouse, it often flies zigzag or flits giddily like a moth.
- It belongs to the taxonomic order 'Chiroptera', derived aptly from the Greek words for 'hand' and 'wing'.
- India has no less than 131 species of bats — yet very little is known about their population status, their behaviour, or their role in the spread of zoonotic disease.
  - Most species are listed as 'data deficient' in the IUCN Red List of Threatened Species.



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