

CURRENT AFFAIRS

WEEKLY

WEEK: 3
NOVEMBER
2021

MAINS

GS-I

- RECORDS OF 320,000 PUNJAB SOLDIERS FROM THE FIRST WORLD WAR UNCOVERED
- CLIMATE CHANGE IS IMPACTING THE STRUCTURE OF EARTH'S ATMOSPHERE

GS-II

- WHAT IS THE DELHI REGIONAL SECURITY DIALOGUE ON AFGHANISTAN?
- HOW A HISTORY OF BROKEN PROMISES HAS LET DOWN INDIA'S SCHEDULED AREAS

GS-III

- FERTILISER SHORTAGE: FARMERS STARE AT ECONOMIC DISTRESS, BLACK MARKETING
- MISSION 2070: A GREEN NEW DEAL FOR A NET ZERO INDIA
- THREAT AND PERCEPTIONS IN THE HIMALAYAS: THE COMPLEXITY OF BHUTAN

GS-IV

- THE CLIMATE CRISIS GIVES SCIENCE A NEW ROLE. HERE'S HOW RESEARCH ETHICS MUST CHANGE TOO

PRELIMS

GEOGRAPHY ■ Leonids Meteor Shower

- INTERNATIONAL RELATIONS**
- Pakistan blocks GoFirst flight: How it flouts freedom of air
 - Srinagar is now a part of UNESCO 'Creative Cities Network'

POLITY & GOVERNANCE

- 75% reservation to locals in private jobs in Haryana
- Government launches E-AMRIT Portal
- Lower judiciary and centralised recruitment debate

ECONOMY ■ Prompt Corrective Action (PCA) Framework for Scheduled Commercial Banks

- RBI commits to Support Greening India's Financial System- NGFS

ENVIRONMENT ■ What caused Earth's first mass extinction?

SCIENCE & TECHNOLOGY

- Nuclear powered submarine, an essential ingredient of Navy's structure

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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.

CURRENT AFFAIRS ANALYST

WEEK- 3 (NOVEMBER, 2021)

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SECTION: A
(MAINS)

CURRENT AFFAIRS

RECORDS OF 320,000 PUNJAB SOLDIERS FROM THE FIRST WORLD WAR UNCOVERED

CONTEXT:

The records of 320,000 troops from the Punjab who fought in the first world war, left unread in a basement for 97 years, have been disclosed by UK-based historians. These findings named 'Punjab Records', offer new insight into the contribution of Indian soldiers to the allied war effort.

◎ BACKGROUND

Punjab was the main recruiting ground for the Indian army during world war I. And yet the contribution of the individuals has largely been unrecognized. In most cases, even names were not known.

- Un-researched for about a century, these registers were compiled by the Punjab government in 1919 after the war had concluded.
- They were lying unread in the basement of the Lahore Museum in Pakistan.
- Amandeep Madra, the chair of the UK Punjab Heritage Association, heard about these records from military historians and approached the museum.
- He was sent samples by a curator and found that they were organized by village and provided extensive details.
- Subsequently, Madra and the University of Greenwich were able to digitize the files.

World War-I

- Approximately 1.3 million Indian soldiers served in World War One - and more than 74,000 of them lost their lives.
- It's more than 100 years since the armistice of 11 November 1918 ended what was once called "the war to end all wars".
- But there are still many untold stories about the Indian Army from the conflict - personal accounts that show how global the war was, and how extraordinary Indian experiences were.

◎ ANALYSIS

What has been found in the project?

- The pilot project has been uploaded in time for Armistice Day, on November 11, which marks the end of the war.
- The pilot project contains 45,000 records from three districts –
 - Jalandhar and Ludhiana in India
 - Sialkot in Pakistan
- Comprising some 26,000 pages listing more than 300,000 individual names, the registers provide village-by-village data on the war service and pensions of recruits from undivided Punjab, as well as information on their family background, rank, and regiment.
- The successful completion of the pilot project is hoped to lead to the release of the registers for the remaining 25 districts of Punjab that were administered by the British government, comprising the records of an estimated 275,000 soldiers.

The long-ignored contribution

- Punjab sent more than 5 lakh soldiers to World War 1, comprising a third of all Indian troops and more than other commonwealth territories such as Australia.
- According to the records, records show that Hindus, Sikhs, and Muslims – the three major faiths in the region – sent soldiers to fight the war in far-flung theatres like France, the Middle East, Gallipoli, Aden, and East Africa.
- It is yet unknown if similar records exist for men from princely states such as Patiala, Jind, Nabha, Kapurthala who had volunteered for World War I.
- The Punjab Registers show that in some villages, as many as 40% of the eligible men had volunteered.

CLIMATE CHANGE IS IMPACTING THE STRUCTURE OF EARTH'S ATMOSPHERE

CONTEXT:

A recent study suggests that climate change is causing a significant impact on the 'structure of the Earth's atmosphere.

◎ BACKGROUND

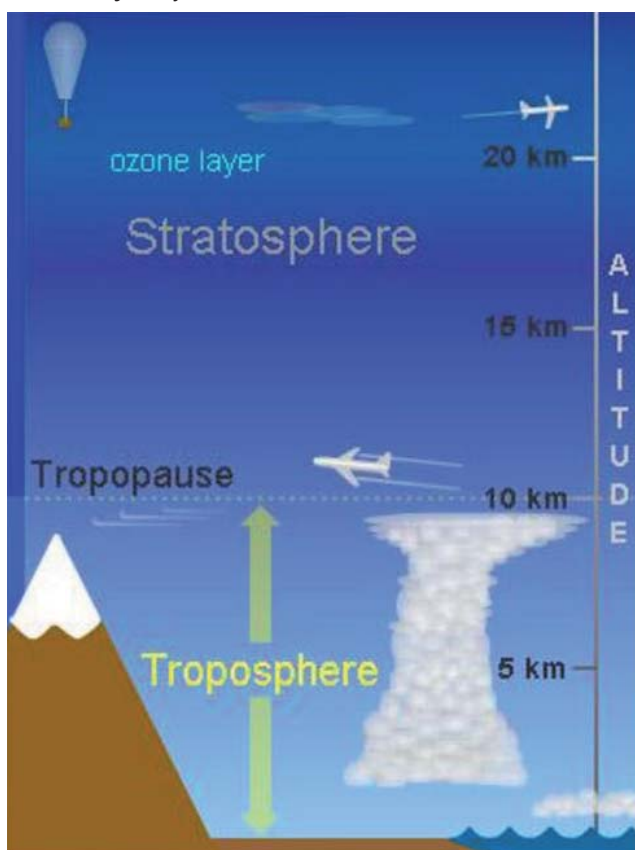
- The study considered decades of weather balloon observations and specialized satellite measurements.
- Based on these observations and measurements, scientists determined how much the top of the lowest level of the atmosphere is rising.

◎ ANALYSIS

Understanding Earth's atmosphere

- Earth's atmosphere is very thin, with a mass of only about one-millionth that of the planet itself.
- Earth's atmosphere has five major and several secondary layers. From lowest to highest, the major layers are the

- Mesosphere
- Thermosphere
- Exosphere



- Troposphere
- Stratosphere

Layers	Location	Function
Troposphere	Extends from Earth's surface to, on average, about 12 kilometers (7.5 miles) in height, with its height lower at Earth's poles and higher at the equator.	It holds all the air plants need for photosynthesis and animals need to breathe. It also contains about 99 percent of all water vapor and aerosols (minute solid or liquid particles suspended in the atmosphere).
Stratosphere	Located between approximately 12 and 50 kilometers (7.5 and 31 miles) above Earth's surface	Known as home to Earth's ozone layer, it protects from the Sun's harmful ultraviolet radiation
Mesosphere	Located between about 50 and 80 kilometers (31 and 50 miles) above Earth's surface, the mesosphere gets progressively colder with altitude.	The top of this layer is the coldest place found within the Earth system. The very scarce water vapor present at the top of the mesosphere forms noctilucent clouds, the highest clouds in Earth's atmosphere. Sounding rockets and rocket-powered aircraft can reach the mesosphere.

Thermosphere	Located between about 80 and 700 kilometers (50 and 440 miles) above Earth's surface	Temperatures increase with altitude due to the very low density of molecules found here. It is both cloud- and water vapor-free. The aurora borealis and aurora australis are sometimes seen here. The International Space Station orbits in the thermosphere.
Exosphere	Located between about 700 and 10,000	This layer doesn't behave like a gas, and particles here escape into space.
	kilometers (440 and 6,200 miles) above Earth's surface	While there's no weather at all in the exosphere, the aurora borealis and aurora australis are sometimes seen in their lowest part. Most Earth satellites orbit in the exosphere.

What has been found?

- They found that the **tropopause** region is pushing up the boundary with the **Stratosphere** by about 50-60 meters (about 165-195 feet) per decade.

Tropopause

- The tropopause is the upper limit of the troposphere and therefore constitutes the boundary between it and the Stratosphere.
- Depending on the season, it ranges from about 5 miles above Earth's surface at the poles to 10 miles at the equator.
- About 80 percent of the atmosphere is contained within its lowest layer, the troposphere.
- It also indicates the location of jet streams and the high winds and turbulence associated with them.
- The location of the tropopause is of interest to flight crew because it indicates the altitude at which temperature becomes constant with increasing altitude, which is an essential factor in performance and fuel calculations.

What is responsible for this change?

This rising is caused by **warming temperatures** near Earth's surface, causing the lower atmosphere to expand.

Conclusion & Way forward

- Unfortunately, greenhouse gas emissions from human activities are going to affect Earth's climate for decades and even centuries. In addition to this, humans will keep on adding carbon dioxide to the atmosphere at a rate far greater than it is removed by a natural process, thus creating a long-lived reservoir of the gas in the atmosphere and oceans.
- In the coming decade, climate change will particularly depend on the number of greenhouse gases emitted into the atmosphere and how much they get absorbed by the ocean, the biosphere, and other sinks. It will also depend on how sensitive Earth's climate is to those emissions.

WHAT IS THE DELHI REGIONAL SECURITY DIALOGUE ON AFGHANISTAN?

CONTEXT:

India hosted senior security officials from Russia, Iran, and the five Central Asian countries to discuss the situation in neighboring Afghanistan following the fall of the U.S.-backed government and the Taliban takeover of the country.

◎ BACKGROUND

- This is the third round of this format of talks involving the security chiefs of Russia, India, China, Pakistan, Iran, and the five Central Asian countries of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan.
- Previous editions (2018 and 2019) of this dialogue were hosted by Iran.

◎ ANALYSIS

Important takeaways of the National Security Advisors' (NSAs') level dialogue

- The dialogue will be led by India's NSA Ajit Doval.
- Apart from the NSA, the Islamic Republic of Iran, the Republic of Kazakhstan, the Kyrgyz Republic, the Russian Federation, the Republic of Tajikistan, Turkmenistan, and the Republic of Uzbekistan also participated in the meeting.
- The participants discussed the evolving situation in Afghanistan, especially the security situation and its regional and global ramifications.
- The sides paid special attention to the current political situation in Afghanistan and threats arising from terrorism, radicalization, and drug trafficking as well as the need for humanitarian assistance.

What message is given by India by holding the dialogue?

By holding the Third Regional Security Dialogue on Afghanistan, India has sent out three strong messages:

- India wishes to remain an important and engaged player in the future of Afghanistan
- With the exit of U.S.-NATO troops, the ideal solution to the situation is through consensus in Afghanistan's extended neighborhood including Russia
- The Afghan humanitarian crisis should be the region's immediate priority and political differences can be set aside to help

Important Infrastructure projects in Afghanistan

- One of the key India-funded projects in Afghanistan is the **42 MW Salma Dam** or the **Afghan-India Friendship Dam project** in Herat Province. It is a hydropower and irrigation project that was completed and launched in 2016.
- The **Zaranj-Delaram highway**, a 218-km path built by the Border Roads Organisation (BRO) also counts as a flagship Indian project in Afghanistan.
- The **Afghan Parliament** is another high-profile project completed by India for \$90 million.
- The restoration and inauguration of the **Star Palace** in 2016, originally built in the late 19th century, is another crucial project undertaken by India in Afghanistan.

Significance of the dialogue

- **An insider benefit:** China and Pakistan do not intend to assist in its Afghan engagement, further demonstrated by the Khan government's churlishness in refusing India road access to send wheat and medicines to Kabul. To that end, the Delhi Declaration issued is a milestone in keeping India inside the discussion on Afghanistan.
- **Strong voice over issues:** The declaration goes farther than the previous regional discussion of SCO countries in Dushanbe in September, in its strong language on terrorism, terror financing, and radicalization.
- **Security:** It also expands on the need for an inclusive government in Kabul that will replace the Interim Taliban regime, and promotes a national reconciliation process.

What happened in Afghanistan?

- In the past few months, Afghanistan has experienced dramatic upheaval as the US withdrew its last remaining troops from the country, ending a two-decade-long military presence triggered by the 9/11 terror attacks.

- Afghanistan had been warned that the US-backed government of President Ashraf Ghani could collapse within months of the American departure under pressure from the Taliban.
 - ▶ Taliban are Islamist militants who ruled Afghanistan under strict Sharia law from 1996 until they were driven out by the US-led invasion in 2001.
- In the event, Ghani fled — and the Taliban seized Kabul — two weeks before the last US troops were gone, bringing an ignominious end to Washington's political and military intervention there.
- Afghans now face uncertain prospects under the renewed rule of the Taliban, which itself is under fire from the extremists of the Afghan affiliate of Isis.

Why situation in Afghanistan is a concern for all?

- The current situation in Afghanistan poses an extra risk of

- ▶ drug trafficking
- ▶ extremism
- ▶ criminality
- ▶ security concerns

- Also, Tajikistan and Afghanistan border remains "complicated" due to many factors.

Wrapping Up

- These kinds of dialogues have the potential to 'restore peace' in Afghanistan by taking practical steps in arresting threats emanating from within the territory of Afghanistan.
- The participants thanked the Republic of India for holding the Third Regional Security Dialogue on Afghanistan in New Delhi. The participants agreed to hold the next round in 2022.

HOW A HISTORY OF BROKEN PROMISES HAS LET DOWN INDIA'S SCHEDULED AREAS

CONTEXT:

It is the silver jubilee year of the Panchayat (Extension to the Scheduled Areas) Act, 1996. However, the law remains disempowered as 40% of the states under its purview have not been able to frame their rules for its implementation even after 25 years of its existence.

◎ BACKGROUND

- A quarter-century ago, on December 24, 1996, the Parliament enacted a law unlike any other in the country.
- This was India's first law to recognize people's powers, in the form of the gram sabha at the hamlet level.
- This path-breaking legislation was the **Provisions of the Panchayat (Extension to the Scheduled Areas) Act of 1996 or PESA**.
- The habitations where scheduled tribes (STs) were the preponderant social group were notified as 'scheduled areas' by the President of India under **Article 244** of the Constitution.

◎ ANALYSIS

Panchayat rule in India

- The **Constitution (73rd Amendment) Act** enacted in 1992 vests power in the Government of the respective State to endow Panchayats with such powers and authority as may be necessary to allow them to function properly as institutions of self-government.
- With the amendment of the Act, Panchayats were given '**constitutional status**' as an institution of local self-governance for rural India.
- The Act mandates provisions for:
 - Establishment of a three-tier structure
 - Village Panchayat
 - Panchayat Samiti or intermediate level Panchayat
 - Zilla Parishad or district level Panchayat
 - Establishment of Gram Sabhas (village level).
 - Regular elections to Panchayats every five years.
 - Proportionate seat reservation for SCs/STs.
 - Reservation for women (not less than one-third of seats).
 - Constitution of the State Finance Commissions to recommend measures to improve the finances of Panchayats

- However, the areas, predominantly inhabited by the Adivasi population, called scheduled areas, were exempted from these new amendments.
- In 1996, the Panchayat (Extension to the Scheduled Areas) (PESA Act), took local self-governance rules to the areas listed under the fifth schedule.

About PESA Act

- Panchayat (Extension to the Scheduled Areas) (PESA Act) extends the provision of the Indian Constitution to formalize the three-tier Panchayati Raj system to fifth Schedule areas with certain modifications and exceptions.
- **Promotion of self-government:** It mandates the state to devolve certain political, administrative, and fiscal powers to local governments elected by the communities.
- **All tribals inclusive:** PESA was meant to benefit not only the majority of tribals but also extended to cover minority non-tribal communities.
- **Effective reservation:** It guarantees tribes half of the seats in the elected local governments and the seat of the chairperson at all hierarchical levels of the Panchayat system.

Sixth Schedule of the Constitution

- The Sixth Schedule of the Constitution of India consists of provisions for the administration of tribal areas in northeastern states of Assam, Meghalaya, Mizoram, and Tripura, according to Article 244 of the Constitution.
- Along with protecting the tribal population, the Schedule provides autonomy to the communities through the creation of autonomous development councils (ADCs) which are empowered to frame laws on land, public health, agriculture, and others.

Fifth Schedule of the Constitution

- The Fifth Schedule deals with the administration of scheduled areas where the majority of the population comprises of the tribal communities.

- Currently, the schedule is in force in 10 states of the country.
- These states include Andhra Pradesh, Jharkhand, Chhattisgarh, Odisha, Gujarat, Himachal Pradesh, Madhya Pradesh, Maharashtra, Rajasthan, and Telangana

What are Scheduled areas?

- Under Article 244 of the Constitution, the President of India notifies the habitations where scheduled tribes (STs) were the preponderant social group as 'scheduled areas'.
- Scheduled areas have been notified in Andhra Pradesh, Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Odisha, Madhya Pradesh, Maharashtra, Rajasthan, and Telangana.
- In the country, STs are not notified in Punjab and Haryana and the UTs of Chandigarh, Delhi, and Puducherry.

Scheduled Tribes

- **Article 366 (25)** prescribes that the Scheduled Tribes means such tribes or tribal communities as are deemed under **Article 342** of the Constitution to be Scheduled Tribes.
- The criteria followed for specification of a community, as a scheduled tribe are:
 - indications of primitive traits
 - distinctive culture
 - geographical isolation
 - the shyness of contact with the community at large
 - backwardness

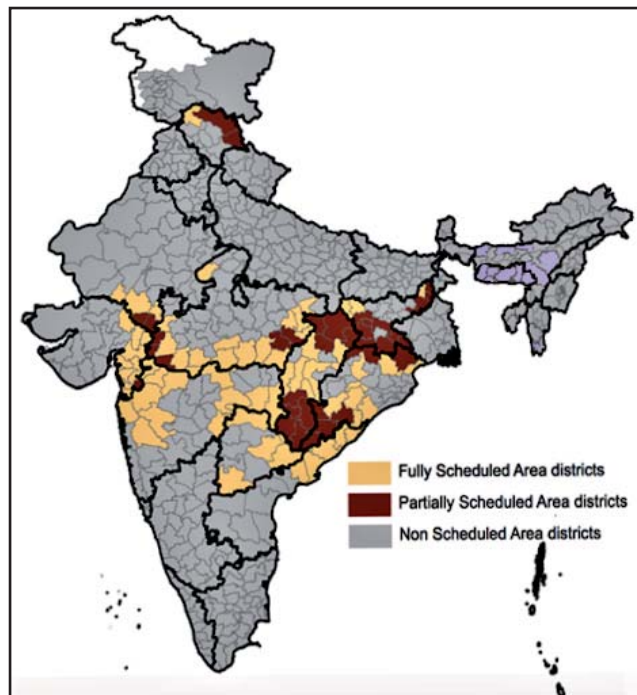
Issues faced by STs

- Unemployment, poverty, homelessness, and water scarcity
- Indebtedness
- Lack of sustainable livelihood opportunities
- Acquirement of personal assets

Are STs placed rightly?

- Thousands of habitations in the states where STs are the major social group have been left out.
- Of the 640 administrative districts, 104 have scheduled areas, 36 are fully notified and 68 are partially notified.
- Some 11.3 % of the total geographical area of the country is notified scheduled area.

- And about 5.7 % of India's population – both tribal peoples and otherwise – resides here; but only about 35.2% of STs reside in scheduled areas.
- The majority of India's STs continue to be denied their special constitutional protections.
- About 53% of the population in scheduled areas are STs – despite the massive influx of outsiders, 'development' projects, and the resulting displacement.
- The process for scheduled area notifications has not been carried out in 11 of the 12 remaining states eligible under the Fifth Schedule of Article 244.



What is the actual situation?

- Only six of the 10 relevant states have rules to operationalize PESA provisions: Andhra, Telangana, Himachal Pradesh, Rajasthan, Maharashtra, and Gujarat.
- So PESA is effectively nonexistent in these 10 states.

S . No	States with scheduled areas	PESA provisions in state panchayat law	Rules
1	Andhra Pradesh	1998	2011
2	Telangana	1998	2011
3	Himachal Pradesh	1998 with effect from 2004	2011
4	Rajasthan	1999	2011

5	Maharashtra	1997	2011
6	Gujarat	1998	2017
7	Madhya Pradesh	1998	Yet to frame Rules
8	Chhattisgarh	1998	Yet to frame Rules
9	Odisha	1997	Yet to frame Rules
10	Jharkhand	2001	Yet to frame Rules

of the rare achievements of PESA even as underlines the possibilities the Act carries. But experts argue that law, however, has failed to achieve its potential and has not created any significant impact on the ground.

The persistent denials

- **Denial of self-government:** Tribal communities have progressively been denied self-government.
- **Denial of rights:** They have been also denied their rights to their communities' natural resources (land, mines and minerals, minor forest produce etc.,) that should have been provided under the legislation.

Case Study

- In 2013, referring to the PESA, the Supreme Court, in a landmark case, had asked the Odisha government to go to the gram sabha to get permission for bauxite mining in Kalahandi and Rayagada district of Odisha.
- Local forest dwellers were asked whether bauxite mining will affect their religious and cultural rights and they decided against the mining on Niyamgiri hills which led to the cancellation of a huge project.
- The case is considered a milestone that shows the power of the gram sabhas but this one

What led to its failure?

- **Ineffective follow up:** Though the Act was enacted but concerned government never pushed to formulate necessary rules. As a result, it was not taken seriously
- There is another reason which made the act irrelevant. After enacting PESA, the Union government brought several other legislations and included many provisions of PESA into these laws. For instance,
 - ▶ the Land Acquisition Act, 2013 empowered gram sabhas immensely
 - ▶ the Forest Right Act, 2006 has provisions of PESA
- Now when people need to protect their rights and resources, they look up to these laws.
- **Time period not specified for rules:** In addition to the above, PESA does not specify rule-making powers or provide a time period by which the States have to frame rules.

CONCLUSION

- In its 25th year when several laws related to mining have been proposed, PESA faces a unique question about its relevance.
- Simply put, the issue that the states have not framed appropriate rules under PESA, and therefore the official system has not operationalized PESA. Therefore, the need of the hour is to strengthen the system for effective implementation of the law.

FERTILISER SHORTAGE: FARMERS STARE AT ECONOMIC DISTRESS, BLACK MARKETING

CONTEXT:

A severe shortage of fertilisers has hit multiple states ahead of the Rabi harvesting season.

◎ BACKGROUND

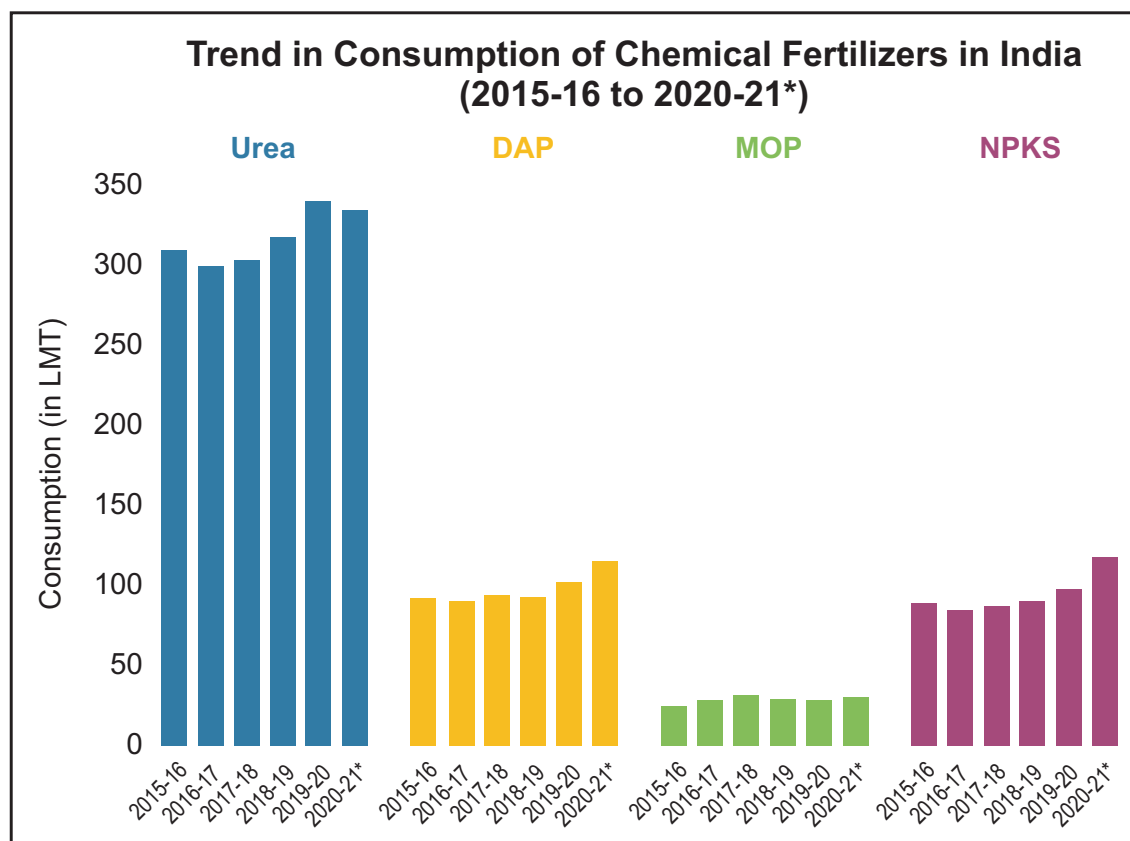
- As an agrarian country, India is home to numerous small and marginal farmers and is often plagued by low productivity and low quality.
- Crops are mainly rain-fed and cultivated on a single piece of land over time, decreasing soil fertility in many regions.
- Thereby, increasing quantities of nitrogen fertilizers have been used in the country.
- Because of this, the Indian government has brought about economic reforms and has ensured that fertilizers are available at affordable prices to increase productivity.
- Due to subsidy eligibility on notified fertilizers, the Indian fertilizer industry has been able to provide enhanced food security for the country.
- However, this current problem of deficiency is a major concern for the country and can have a

wide impact even on the food security. Therefore, it is important to have an analytical view of the ongoing situation.

◎ ANALYSIS

The state of the Indian fertilizer industry

- As one of the country's eight core industries, fertilizer production has had positive growth since 2014.
- India is among the largest consumers of fertilizers in the world, with domestic sales continually growing.
- The Indian fertilizer industry comprises of various government and private fertilizer companies which produce a variety of fertilizers:
 - Indian Farmers Fertiliser Cooperative Limited (IFFCO)
 - National Fertilizers Limited
 - Coromandel International Limited



What is Di-Ammonium Phosphate (DAP)?

- DAP is the second most widely used fertilizer in India after.
- Growers tend to apply this fertilizer just before or at the start of sowing, as it is high in phosphorus (P) which stimulates root growth.
- It is a basic nutrient for Rabi crops.
- **DAP (46% P, 18% Nitrogen)** is the preferred source of Phosphorus for farmers.
- This is similar to urea, which is their favorite nitrogenous fertilizer containing 46% N.
- DAP is an essential input for ensuring optimum productivity of wheat, which is sown on an area of about 35 lakh hectares in Punjab.

What about alternate fertilizers?

There are alternatives such as:

- single super phosphate (SSP)
- nitrogen phosphorous and potassium (NPK)

What factors determine fertilizer usage?

- Consumption of fertilizers and pesticides is determined by multiple factors such as
 - area of land under cultivation
 - the type of crop
 - cropping pattern and cropping intensity
 - soil type and its condition
 - agro-climatic conditions
 - the ability of farmers to purchase, irrigation, and others

Why is fertilizer important for feeding the world?

- **Nutrient supply:** Fertilizers replace the nutrients that crops remove from the soil.

- **Reduction of productivity:** Without the addition of fertilizers, crop yields and agricultural productivity would be significantly reduced.

Thus, in order to meet human nutritional needs in the crops and meat, it is required to replace what is taken out.

Simplified (properties of fertilizers)

- Provide nutrients not available in the soil
- Replace nutrients removed at harvest
- Balance nutrients for better produce quality and higher yield

What are the reasons behind the shortage?

- **External factor**
 - Rising international prices
 - market volatility

- The DAP fertiliser from the US, Russia and China fulfills 70% of the country's need while the rest of 30% is manufactured domestically.
- This year, the DAP production in China and two other countries was hit due to Covid-19, pushing the rates in the international market.

- **Internal factors**
 - hoarding
 - black marketing
 - bad logistics

◎ CONCLUSION

To correct the situation, the government needs to ensure priority movement of fertilisers to key food-bowl states as fears of shortage have triggered panic buying of crop nutrients.

MISSION 2070: A GREEN NEW DEAL FOR A NET ZERO INDIA

CONTEXT

The World Economic Forum (WEF) published its report titled “Mission 2070: A Green New Deal for a Net-Zero India” to provide a roadmap for India’s energy transition.

◎ BACKGROUND

- At **COP 26**, India joined the other G20 countries in making a “**net-zero**” commitment, setting **2070 as its target year**.
- For the more foreseeable future, it made some tangible commitments:
- To bring **non-fossil energy capacity** of India to **500 GW by 2030**,
- To lower **carbon intensity to 45 per cent by 2030**
- To **reduce 1 billion tonnes of carbon emissions** out of total projected emission by 2030.
- To fulfil **50 percent of energy requirements** using renewables by 2030.
- This is not just significant for the world, but we believe also a sizable economic opportunity for India.

◎ ANALYSIS

What does Net-Zero mean?

- Net zero refers to the **balance between the amount of greenhouse gas produced and the amount removed** from the atmosphere.
- We reach net zero when the amount we add is no more than the amount taken away.

Why was it important to sign up for net-zero?

- Vulnerability to Climate Change** : India’s topography — its 7,000 km-long coastline, the Himalayan glaciers in the north, and its rich forest areas which house natural resources like coal and iron ore — make the country uniquely vulnerable to climate change.
- Large parts of the population also remain unprotected.
- Impact on GDP** : An IMF study suggests that if emissions continue to rise this century, India’s real GDP per capita could fall by 10 per cent by 2100.
- Third largest emitter** : India’s traditional position has been that since its per capita energy use is only a third of the global average, and it needs to

continue to grow to fight poverty, costly energy reduction targets should not be applied to it.

- And yet, India is the third-largest emitter in the world and technological development is making it possible to decouple economic and emissions growth by switching to renewables.

Key Highlights of Report by WEF

- Economic Impact** : Report highlights that India’s transition towards a green economy could contribute about \$1 trillion in economic impact by 2030. It will create more than 50 million jobs.
- The economic impact would increase to \$15 trillion by 2070.
- Achieving Climate Change targets** : Report notes that India’s commitments are a critical foundation for achieving the 1.5-degree Celsius global warming target.
- Reducing impact of Climate change on country** : India is on the frontline of climate change. More Indians are exposed to negative effects of climate change and extreme weather events as compared to other nationalities.
- The report highlights why **India’s green transformation** is an attractive, vital and mandatory component of **its overall economic transformation**.
- A Green New Deal for India will necessarily implicate the **five sectors** that contribute to almost all its GHG emissions:
- Pillar 1 – Energy:**
 - The **energy sector accounts for ~40% of India’s GHG emissions**, with coal being the dominant source of total fossil CO2 emissions.
 - Decarbonizing the energy sector is a foundational priority for India’s energy sector and will require **a three-pronged approach**: replace fossil fuels with renewables; reduce fossil CO2 emissions from legacy infrastructure through enhanced efficiencies; and remove unavoidable carbon emissions through carbon sequestration.
- Pillar 2 – Mobility:**
 - The mobility sector is **heavily reliant on oil** and contributes to **almost half of India’s oil demand**.

- ▶ **A green transformation of mobility will need** a shift in modal mix from road to rail, as well as a broad-based fuel diversification approach to encourage sustainable fuels (biofuels, CNG, LNG) in the immediate term, electrification in the medium term and hydrogen-based heavy mobility in the long term.
- **Pillar 3 – Industry:**
 - ▶ **Manufacturing is a key contributor to India's GHG emissions**, with the iron and steel, cement, and chemicals and fertilizers sectors having the highest CO2 footprint.
 - ▶ A radical decarbonization of these sectors will need **demand-management measures such as** circular economy acceleration; continued energy-efficiency improvements; electrification of heat; carbon capture, utilization and storage; low-carbon fuels such as biomass and hydrogen; and innovative technologies with non-fossil feedstock.
- **Pillar 4 – Green Buildings, Infrastructure and Cities:**
 - ▶ India's top 25 cities contribute more than 15% of its estimated GHG emissions.
 - ▶ **India's transition to greener cities, buildings and infrastructure will need** a rethink of its approach to urban planning with a focus on transit-oriented urban development and an emphasis on low-carbon buildings and infrastructure construction.
- **Pillar 5 – Agriculture:**
 - ▶ The agriculture sector is the **largest contributor to nitrous oxide (N2O)** and methane emissions.
 - ▶ To reduce agriculture emissions, India will need a national campaign to empower, educate and enable more than 100 million farmers in adopting precision agriculture, sustainable animal husbandry and green energy.
 - ▶ In addition to the five sectoral pillars, India will need **four cross-sectoral enablers** for its green transition.
 - ▶ An accelerated approach to **green technology innovation**,

- ▶ an overarching framework to **catalyse green finance**,
- ▶ an integrated approach to **carbon, capture, utilization and storage**, and
- ▶ a **plan for climate adaptation**

Challenges India will face in achieving Net-zero targets:

- **Poor financial condition of DISCOMs** : The finances of power distribution companies need to be improved to fund the grid upgrades necessary for scaling up renewables.
- This would require a host of reforms, including having a truly independent regulator who ensures market pricing of power tariffs, incentives that speed up smart metering and plug T&D losses, and policies that lead to the privatisation of discoms.
- **Coordinated Institutional framework** : India needs a coordinated institutional framework that can help overcome multiple levels of complexity like federalism, fiscal constraints and bureaucracy.
- This is particularly important as the green transition will be a multi-stage process.
- **High Energy Investment requirement** : The energy investment requirement will be high, rising from about \$70-80 billion per year now to \$160 billion per year.
- Alongside this, a similar amount will be needed for transportation and other infrastructure.
- While the private sector will be required to fund much of this, the government can play a pivotal role, especially in the early days.

◎ CONCLUSION

Across the world, efforts towards "green new deals" have intensified — policy packages that combine measures towards decarbonization and adaptation with those that would increase livelihoods and create wealth. There is a new expectation that the green transition will not be a drag on economic prosperity, but indeed the engine for an economic transformation that will increase inclusion and growth.

THREAT AND PERCEPTIONS IN THE HIMALAYAS: THE COMPLEXITY OF BHUTAN

CONTEXT:

Recently, China and Bhutan signed a MoU to settle and demarcate their borders vis-à-vis a three-step roadmap.

Significance of MOU

- Bhutan happens to be one of the few countries questioning China's regional ambitions by not establishing diplomatic ties and demarcating territorial borders with the former.
- China claiming this MoU as a 'deadlock breaker'- a deal that will set the ground for future China-Bhutan diplomatic relations.
- There is also a widely believed Chinese perception that this MoU has eroded India's sphere of influence and power vis-à-vis China.

Perception on Bhutan's Foreign policy

- It is a product of balance of threat and not balance of power. In other words, it was the common perception of Chinese threat and intentions that drew Bhutan closer to India.
- The Chinese intentions and ambitions were quite clear since the 1930s when Mao had claimed Bhutan to be a part of China.
- These suspicions got enhanced with China's Tibet annexation and inhumane treatment of Tibetans, pushing Bhutan to embrace India and seek its security and economic aid.

Bhutan & China Relation

- China has continued claiming and disputing territories with Bhutan. At present, China's claims are in Central, Eastern, and Western Bhutan.
- Starting from 1984, Bhutan had even begun direct negotiations with China to solve these disputes peacefully and have held 24 rounds of talks and 10 rounds of expert-level meetings to date.
- In 1996, China had even offered a package deal to solve the issue. But Bhutan rejected the proposal keeping Indian security concerns in mind. With limited progress, both China and Bhutan signed an agreement in 1998 to maintain the status quo until the border dispute is resolved.
- But despite the agreement, China has used encroachments and transgressions to persuade Bhutan to resolve the outstanding border issues.
- These intimidating tactics have increased with the 2017 Doklam stand-off, when China developed military infrastructure and settlements in the region.

- In 2020, it also laid claims in Western Bhutan for the first time and built military outposts and settlements in Northern Bhutan. In fact, these tactics seem to have persuaded Bhutan to sign the recent MoU.

Bhutan's Significance to India

- **Geographical Significance:** Bhutan shares border with four Indian States: Assam, Arunachal Pradesh, West Bengal and Sikkim. Nestled in the Himalayas, Bhutan serves as a buffer between India and China. Security of Bhutan's present borders especially its western border is very important for India.
- **Economic Significance:** Bhutan provides a market for Indian commodities and is a destination for Indian investment. Also for India, Bhutan is a rich source of hydropower.
- **Political Significance:** A politically stable Bhutan is important to India. An unstable and restive Bhutan can provide a safe haven to anti-India activities and anti-India militant groups.

Concerns for India:

- China's new territorial claim is part of a larger Chinese strategy to put pressure on India's smaller neighbours, to punish them for any closer to India.
- In 2017 China had invaded the plain of Doklam, called Bhutan, which led to tensions between the Indian and Chinese forces.
- China may have done this to put pressure on India, or divert India's attention to its violence in Ladakh.
- Sakteng is located near the border of Arunachal Pradesh, another part of which is also called China.
- Even after the 2007 India-Bhutan Friendship Treaty, Indian troops have a responsibility to protect Bhutan from a kind of external threat posed by Chinese troops.
- According to the India-Bhutan Friendship Treaty of 1949, Bhutan allowed India to "direct" its foreign policy and security issues.
- However, the 1949 treaty was amended in 2007 to honour Bhutan's sensitivity to its sovereignty.
- Under the India-Bhutan Friendship Agreement of 2007, both parties have agreed to work closely together on issues of national interest.

- No Government shall allow the use of its territory to cause harm to the security of the country or the interests of another.
- China has said a third party should not point fingers at the China-Bhutan border issue, which is a clear indication of India.

◎ **CONCLUSION**

China is on a quest of its own and its recent engagement with Bhutan- one of India's closest

neighbours and friends has enabled China to build a seemingly benign narrative for the world while belittling India and its efforts in the neighbourhood. China's increasing presence in the neighbourhood has triggered and continues to trigger several anxieties for India. Having exposed much of the neighbourhood to China's investments and debt-trap diplomacy, India is now more committed to preventing the same in Bhutan. The competition isn't just for power and security, but for also prestige, and it is likely that this competition for Bhutan will have spill-over effects throughout the region.

THE CLIMATE CRISIS GIVES SCIENCE A NEW ROLE. HERE'S HOW RESEARCH ETHICS MUST CHANGE TOO

CONTEXT:

One of the most daunting problems facing the world today is climate change. As we move forward in finding ways to adapt and mitigate climate change, recognising the ethical problems associated with it is crucial.

Necessity to consider the ethical dimensions of Climate Change:

- Climate change has significant implications for international equality, as both the causes and effects of climate change are unequally distributed around (and within) nations. In general, countries that are least responsible for climate change have the lowest socio-economic capacity to cope with the adverse consequences of climate change, which is a significant ethical problem for them.
- Climate change, mobilised by the search for scarce resources, has the ability to cause conflict.
- The need for an ethical solution is therefore convincing.
- Other ethical concerns include: how present and future generations, developed and developing countries, etc., can identify and distinguish obligations.

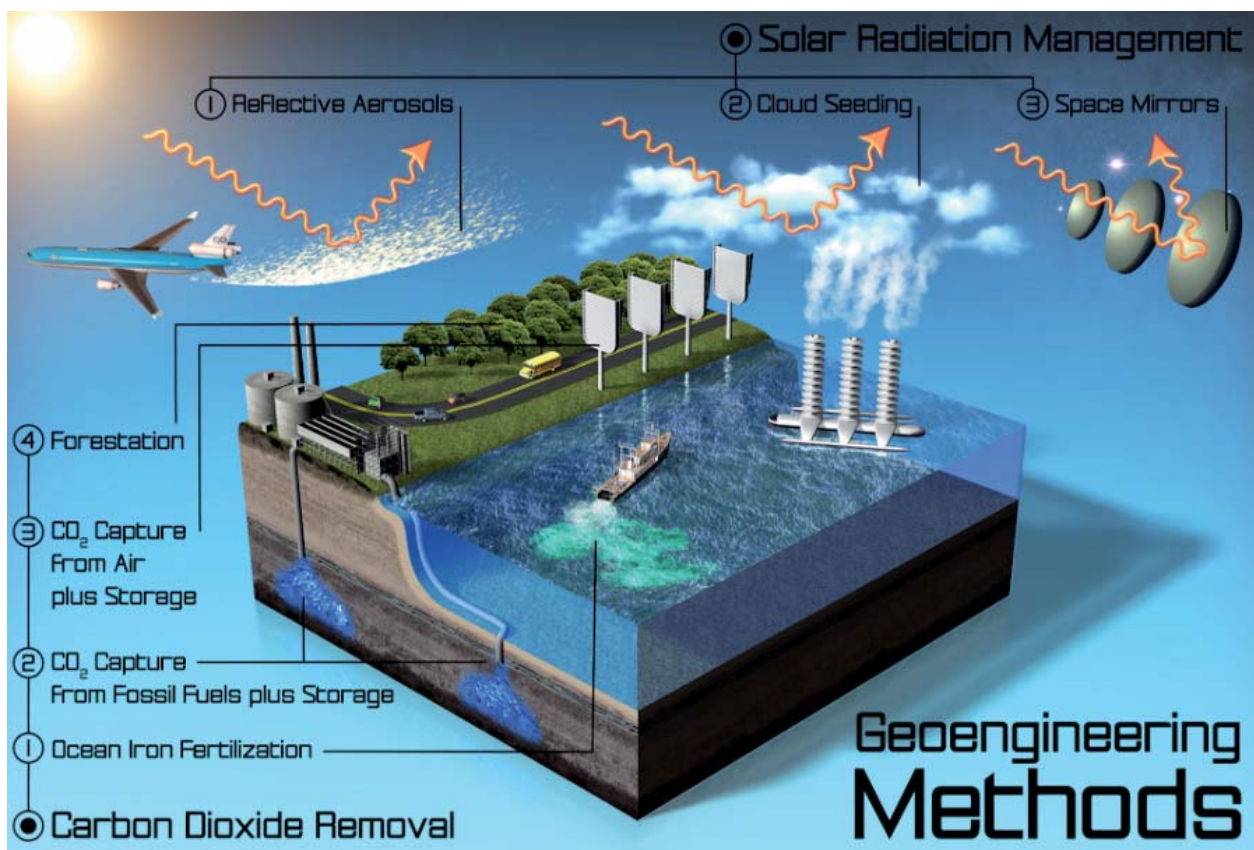
What is the major issue for the protests happening?

- Young people across the world have taken to the streets again, demanding decision-makers at COP26 listen to the science.
- Also, the ongoing planetary crises create new ethical dilemmas for researchers.
- There are protest against inaction towards climate change and called for concrete government action.

What are the principles of research ethics?

The three main principles of research ethics are–

- Do no harm
- Integrity
- Responsibility



What are new ethics proposed by environmentalists?

- Environmentalists are proposing a move from a negative ethics focused on avoiding harm to a positive research ethics. These new ethics are needed to guide the global scientific community in relation to civil society and politics during the climate and ecological crises.

What is the meaning of these three pillars?

Do no harm

- According to the "do no harm" imperative, researchers have a responsibility to avoid hurting humans or animals directly involved in their research. A growing group of scientists question the carbon footprint of academic activities, ranging from flying to conferences to developing artificial intelligence. The long-term and unpredictable consequences of research have also come back into focus. An example is the debate about the high risks of geoengineering.

The "do no harm" principle should thus be broadened in two ways:

- It should include humans, animals and ecosystems that are traditionally not considered part of the research process, but can be negatively affected by it
- It should better account for the long-term, indirect or unintended consequences of research projects or new technologies.

Act with Integrity

- The principle of integrity asks researchers to follow rigorous protocols, disclose conflicts of interest, refrain from manipulating data, and abstain from plagiarism. For example, by focusing heavily on GDP growth, mainstream economics portrays our planetary habitat mostly as a resource to use or

exploit. The idea of geoengineering also largely rests on an understanding of our life-support systems as a set of disconnected pieces that can be engineered.

- Ultimately, "integrity means wholeness". It implies acknowledging that we are parts of a fragile and interconnected web of life, which we need to preserve.

Take responsibility

- According to the "responsibility" principle, research should be relevant to society and communicated to the public. But in a climate crisis, findings can be so dramatic, their implications for society so huge and controversial, that the word "responsibility" takes a new, heavier meaning.
- The "responsibility" principle should therefore be enriched in three ways:
- Scientists should take their own findings seriously and stand up for their societal implications, even when it is uncomfortable to do so
- Researchers must defend the scientific process itself from the influence of political and economic interests
- Scientists can remain humble as to what science can achieve. This means acknowledging the limits to our knowledge of an infinitely complex world, as well as the slow pace and unpredictable consequences of technological development.

Concerns about future generations in an Ethics of climate change:

- With regard to every distant future generation, the alarming state of the present generation is that it still finds itself in a unilateral role: it is still in a role to behave with impunity, as there is no reason for reciprocity from those generations to come.
- As such, an important aspect of the ethical response to climate change is the concern of future generations.

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LEONIDS METEOR SHOWER

◎ CONTEXT

The annual Leonids Meteor Shower has begun. This year's shower is active between November 6 and 30, with peak activity expected on November 17.

What is the Leonids Meteor Shower?

- Originally discovered in 1833, the Leonids Meteor Shower contains debris left behind by the 55P/Tempel-Tuttle comet that enter Earth's atmosphere.
- As they fall from the sky and brought towards the ground by Earth's gravity, the friction of the atmosphere on their re-entry lights up the debris.
- These debris are called **meteors** and are seen as bright streaks of light across the night sky.
- The meteor shower has been named the **Leonids Meteor Shower** as it seems to emanate from the sector of the sky where the head of the Leo constellation lies.
- The meteors are some of the fastest that are seen on Earth, travelling at speeds of up to 2,55,600 kmph.
- The meteors are also seen as streaking very close to the horizon.

Occurrence of the event

- Every 33 years, a Leonid shower turns into a meteor storm, which is when hundreds to thousands of meteors can be seen every hour.
- A meteor storm should have at least 1,000 meteors per hour.
- In 1966, a Leonid storm offered views of thousands of meteors that fell through the Earth's atmosphere per minute during a period of 15 minutes.
- The last such storm took place in 2002.
- The showers are visible on any cloudless night when the Moon is not very bright.

SRINAGAR IS NOW A PART OF UNESCO 'CREATIVE CITIES NETWORK'

◎ CONTEXT

Recently, the **United Nations Educational, Scientific and Cultural Organization (UNESCO)** designated **Srinagar** as a part of the **UNESCO Creative Cities Network (UCCN)**.

Important facts about the designation

- The Srinagar city has been designated the creative city in the field of **Crafts and Folk Arts** - the only second city in India in this category after **Jaipur**.
- It will not only provide international recognition for the city of Srinagar but also help it with international funding, networking and vocational universities and pitching arts as a product.
- With this, **Srinagar** (the capital city of **Jammu and Kashmir**) has entered the club of **295 creative cities network** across the world.
- Every year, UNESCO seeks applications for various cities across the globe for putting them under its UCCN project.
 - In India, the applications are routed through the Ministry of Culture.

Indian Cities on UCCN

- **Srinagar** - Crafts and Folk Arts (2021)
- **Mumbai** – Film (2019)
- **Hyderabad** – Gastronomy (2019)
- **Chennai**- Creative city of Music (2017)
- **Jaipur**- Crafts and Folk Arts (2015)
- **Varanasi**- Creative city of Music (2015)

UNESCO Creative Cities Network (UCCN)

- **UCCN** was created in **2004**.
- It aims to “**promote cooperation among cities which recognize creativity as a strategic factor in their urban development**”.
 - **Sustainable Development Goal 11** aims for **Sustainable Cities and Communities**.
- The network covers **seven creative fields**:
 - Crafts and folk arts
 - Media arts
 - Film
 - Design
 - Gastronomy
 - Literature
 - Music

PAKISTAN BLOCKS GOFIRST FLIGHT: HOW IT FLOUTS FREEDOM OF AIR

◎ CONTEXT

Pakistan has denied use of its airspace to Go First's Srinagar-Sharjah flight.

Important facts about the flight

- The direct flight is operated by low-cost airline GoFirst (formerly known as GoAir) - that was recently inaugurated.
- The plane was to operate in Pakistan's airspace.
- This is the **first service between Jammu and Kashmir and the UAE** after 11 years.
 - Air India Express had started a Srinagar-Dubai flight in February 2009 but it was discontinued after some time due to low demand.
- The Srinagar-Sharjah flight duration is around three hours if the Pakistan airspace is used, however, with Islamabad refusing to allow the flight through its airspace, it will be nearly an hour longer, raising fuel and ticket costs.

What is Freedom of air?

- Freedom of air refers to a country that gives foreign airlines the right to use and/or land another country's airspace.
- Freedom from air rule came from the **Chicago Convention in 1944**.
- The signatories to the convention decided to set rules that would act as fundamental building blocks to international commercial aviation.

- The conference provides for nine air freedoms, but only the first five freedoms have been officially recognized by the **International Civil Aviation Organization (ICAO)**.

International Civil Aviation Organization

- It is a **United Nations (UN)** specialized agency, that lays the foundation for the standards and procedures for **peaceful global air navigation**.
- **Established in:** 1944
- **Members:** India has between 193 members.
- **Headquarter:** Headquarters in Montreal, Canada.
- The Convention on International Civil Aviation was signed on **7 December 1944** in **Chicago**.
- It established the core principles permitting international transport by air, and also led to the creation of the **International Civil Aviation Organisation (ICAO)**.

Five air Freedoms

- **First Right of Freedom:** It is granted by one State to another State or States to fly across its territory without landing.
- **Second Freedom of Rights:** A right or privilege, in respect of an organized international airline, granted to one State to another state or states to land its territory for non-traffic purposes.
- **Third Freedom of Rights:** To put down, in the territory of the First State, traffic coming from the home State of the carrier.
- **Fourth Right to Freedom:** To take on, in the territory of the First State, traffic destined for the home State of the carrier.
- **Fifth Amendment Freedom:** To put down and to take on, in the territory of the First State, traffic coming from or destined to a third State.

GOVERNMENT LAUNCHES E-AMRIT PORTAL

◎ CONTEXT

Recently, India launched an **electric vehicle awareness web portal** called **e-Amrit**.

What is the e-AMRIT Portal?

- It is a '**one-stop site**' containing all the information regarding adoption of **electric vehicles (EVs)** in **India**.
- e-AMRIT portal stands for "**Accelerated E-Mobility Transformation for Indian Transportation**".
- **Developed by:** This web portal was developed by NITI Aayog in association with the UK government as part of the **India-UK Joint Roadmap 2030**.
- **Purpose:** To create awareness regarding **electric mobility** in India.

Electric Vehicle

- An EV is a shortened acronym for an electric vehicle.
- EVs are vehicles that are either partially or fully powered on electric power.
- Electric vehicles have low running costs as they have less moving parts for maintaining and also very environmentally friendly as they use little or no fossil fuels (petrol or diesel).

Features of the e-AMRIT portal

- Feasibility research on switching to EV
- Knowledge repository on EV
- Tools to calculate EV experience
- Information about EV businesses

Important schemes for creating an ecosystem for adoption of EVs

- In the recent past, India has taken many initiatives to accelerate the decarbonisation of transport and the adoption of electric mobility in the country.
- Some of the important schemes are:
 - Faster Adoption of Manufacturing of Electric Vehicles (FAME) Scheme
 - Production Linked Incentive Scheme

75% RESERVATION TO LOCALS IN PRIVATE JOBS IN HARYANA

◎ CONTEXT

The Haryana government notified that its act of implementing 75% reservation for local people in private jobs with a monthly salary ceiling of ₹50,000 will come into force from 15 January, 2022.

What is provided in the Act?

- The act provides for the reservation of 75% of new jobs for local candidates in various companies, societies, trusts, and limited liability partnership firms situated in the state.
- **Applicability:** The law will be applicable for a period of 10 years.
- The state government also relaxed the residency (domicile) requirement from 15 to five years for a person to get a **bona fide resident certificate** in the state to provide some flexibility to the private companies in hiring.
- The state government also reduced the upper limit of gross monthly salary for jobs which will come under the ambit of the private sector job quota law.
- As per the official notification, jobs with a gross monthly salary of not more than ₹30,000 will be up for hiring from among local candidates.
- The bill passed by the assembly last year capped the gross monthly wages for jobs available for hiring at ₹50,000.

Current scenario of Reservation

- The Supreme Court ruling that reservations cannot exceed 50% (which it judged would violate equal access guaranteed by the Constitution) has put a cap on reservations.
- The current scenario of Reservation in India is:
 - 15% seats are reserved for Scheduled Castes (SC)
 - 5% seats are reserved for Schedule tribes (ST)
 - 27% seats are reserved for Other backward classes (OBC)

Can a law be framed for reservation on domicile?

- Yes, but only by the Parliament.
- Article 16(3) in the Constitution empowers Parliament to provide for domicile-based reservation in public employment and jobs with local or any other authority under a state or a Union Territory.

What is 'Locals First' Policy?

- This policy implies that jobs that will be created in a state will be first offered to only people who belong to that state i.e., local people.

How is it linked to migration?

- More Indians are also moving across state lines in search of better educational opportunities.
- But despite these newly emerging trails, in a majority of India's districts, less than one in 10 (or less than 10%) of the urban workforce is an interstate migrant.

Indian Constitution & Migration:

- The Constitution of India guarantees 'freedom of movement' and consequently employment within India through several provisions.
 - **Article 19** ensures that citizens can "move freely throughout the territory of India".
 - **Article 16** guarantees no birthplace-based discrimination in public employment.
 - **Article 15** guards against discrimination based on place of birth.
 - **Article 14** provides for equality before law irrespective of place of birth.

LOWER JUDICIARY AND CENTRALISED RECRUITMENT DEBATE

◎ CONTEXT

The central government is preparing to give a fresh push to the establishment of an All India Judicial Service (AIJS) on the lines of the central civil services.

What is 'All-Indian Judicial Service'?

- The AIJS is a reform push to centralize the recruitment of judges.
- It would work at the level of additional district judges and district judges for all states.
- This idea has been discussed in legal circles for many years, and remains debatable.
- In 2006, the **Parliamentary Standing Committee on Personnel, Public Grievances, Law and Justice** in its 15th Report pushed the idea of a **pan-Indian judicial service**, and made a draft Bill.

Background

- The proposal for an All-India Judicial Service was first suggested in the early 1960s.
- While the proposal was revived a few times, including in 2012, it could not be implemented due to opposition from some high courts and states.
- In December 2019, reported that the government's proposal had received mixed response from various states and high courts.

Who deals with All-India Services?

- **Article 312** of the Indian Constitution, which deals with '**All-India Services**', says that Parliament may, among other things, provide for the creation of one or more all India services, including an all-India judicial service, common to the Union and the states.
- Article 312 also lays down that such a service may be created if the Rajya Sabha declares "by resolution supported by not less than two-thirds of the members present and voting that it is necessary or expedient in the national interest so to do".

- It adds that no law providing for the creation of AIJS — which “shall not include any post inferior to that of a district judge” — “shall be deemed to be an amendment of this Constitution”.

Supreme Court’s View

- In 1992, the Supreme Court (SC) in **All India Judges’ Association v. The Union of India** directed the Centre to set up an AIJS.
- In a 1993 assessment of the judgment, however, the court left the Centre at liberty to take the initiative on the issue.
- In 2017, the SC took *suo motu* cognizance of the issue of appointment of district judges, and mooted a Central Selection Mechanism.
 - Based on the merit list, High Courts can hold interviews and recruit judges.

How are district judges currently recruited?

- The selection process is conducted by the **State Public Service Commissions** and the concerned **High Court** since High Courts exercise jurisdiction over the subordinate judiciary in the state.
- Panels of High Court judges interview candidates after the exam and select them for an appointment.
- Articles 233 and 234 of the Constitution of India deal with the appointment of district judges, and place it in the domain of the states.
- All judges of the lower judiciary up to the level of district judge are selected through the **Provincial Civil Services (Judicial) exam**.

How would AIJS improve the judiciary system?

- Efficient Judiciary
- Ease of Doing Business
- Equal representation of marginalized and underprivileged elements of society in Judiciary
- Creation of a pool of brilliant individuals
- Addressing concerns such as corruption and nepotism

PROMPT CORRECTIVE ACTION (PCA) FRAMEWORK FOR SCHEDULED COMMERCIAL BANKS

◎ CONTEXT

The Reserve Bank of India has revised **Prompt Corrective Action (PCA) framework** for **Scheduled Commercial Banks** which will be effective from Jan, 2021.

What is PCA framework?

- Prompt Corrective Action (PCA) Framework refers to the central bank’s watchlist of weak banks.
- The regulator imposes restrictions like curbs on lending on such banks.
- The PCA Framework applies only to commercial banks and does not cover cooperative banks and non-banking financial companies.
- The objective of the PCA Framework is to enable Supervisory intervention at appropriate time and require the Supervised Entity to initiate and implement remedial measures in a timely manner, so as to restore its financial health.
- **Applicability:** The PCA framework would apply to all banks operating in India including foreign banks operating through branches or subsidiaries based on breach of risk thresholds of identified indicators.

- Capital, asset quality and leverage of the banks are some of key areas that will be taken into consideration for monitoring.
- The indicators that will be tracked for capital, asset quality and leverage would be CRAR/ common equity tier I ratio 2, net NPA ratio 3 and tier I leverage ratio 4 respectively.

RBI COMMITS TO SUPPORT GREENING INDIA'S FINANCIAL SYSTEM- NGFS

◎ CONTEXT

The Reserve Bank of India (RBI) published its 'Statement of Commitment to Support Greening India's Financial System – NGFS', coinciding with the 2021 United Nations Climate Change Conference (COP26).

What is NGFS?

- Launched at the Paris One Planet Summit on December 12, 2017, NGFS is a group of central banks and supervisors willing to share best practices and contribute to the development of environment and climate risk management in the financial sector while mobilising mainstream finance to support the transition towards a sustainable economy.
- The Network's purpose is to:
 - help strengthening the global response required to meet the goals of the Paris agreement
 - to enhance the role of the financial system to manage risks
 - to mobilize capital for green and low-carbon investments in the broader context of environmentally sustainable development

RBI's integrating towards 'green solutions'

- RBI is committed to integrating **climate-related risks** into financial stability monitoring as well as exploring use of climate scenario exercises to identify vulnerabilities in the central bank-supervised entities.
- The apex bank joined the **Central Banks and Supervisors Network for Greening the Financial System (NGFS)** as a Member in April this year, and aims to learn from as well as contribute to global efforts on green finance.
- NGFS has reiterated its willingness to contribute to the global response required to meet the objectives of the **Paris Agreement**, and, to that end, NGFS will expand and strengthen the collective efforts towards greening the financial system.

Major commitments made by RBI

Specifically, keeping in view national commitments, priorities and complexity of our financial system, RBI commits to:

- Exploring how climate scenario exercises can be used to identify vulnerabilities in RBI supervised entities' balance sheets, business models and gaps in their capabilities for measuring and managing climate-related financial risks
- integrating climate-related risks into financial stability monitoring
- Building awareness about climate-related risks among regulated financial institutions and spreading knowledge about issues relating to climate change and methods to deal with them accordingly.

WHAT CAUSED EARTH'S FIRST MASS EXTINCTION?

◎ CONTEXT

A recently published paper has come up with a 'new reason' behind the first mass extinction, also known as the **Late Ordovician mass extinction**.

What's the new finding?

- The article notes that the cooling climate likely changed the ocean circulation pattern.
- This caused a disruption in the flow of oxygen-rich water from the shallow seas to deeper oceans, leading to a mass extinction of marine creatures.

What is mass extinction?

- Mass extinctions are defined as any substantial increase in the amount of extinction (lineage termination) suffered by more than one geographically wide-spread higher taxon during a relatively short interval of geologic time, resulting in an at least temporary decline in their standing diversity.

Major mass extinction events in the geological history of Earth:

- **Ordovician-Silurian extinction 485 to 444 million years ago:** killed about 85% of all species.
- **Late Devonian extinction - 383-359 million years ago:** wiped out about 75% of the world's species.
- **Permian-Triassic extinction - 252 million years ago:** also known as the Great Dying caused the extinction of over 95% of all species.
- **Triassic-Jurassic extinction - 201 million years ago:** eliminated about 80% of Earth's species, including some dinosaurs.
- **Cretaceous-Paleogene extinction - 66 million years ago**

What's leading to the extinction?

- destruction and fragmentation of habitats
- direct exploitation like fishing and hunting
- chemical pollution
- invasive species
- human-caused global warming
- Uncontrolled human population
- Overexploitation of resources

NUCLEAR POWERED SUBMARINE, AN ESSENTIAL INGREDIENT OF NAVY'S STRUCTURE

◎ CONTEXT

Nuclear submarines are back in the news post the announcement of AUKUS (Australia, the UK and the US) forming a military alliance.

- Under this alliance, the US and the UK have offered Australia their expertise to build nuclear submarines.

What is a nuclear weapon?

- A nuclear-powered submarine is powered by a nuclear reactor.
- But it is not a nuclear weapon.
- Every nuclear-powered submarine draws from its own miniature nuclear reactor onboard, which is typically fuelled with uranium.

- For such a reactor to work, uranium has to be 'enriched' to contain 50 per cent of a key isotope, uranium-235.
 - Natural uranium consists of approximately 99.3 per cent of the isotope uranium-238 and only 0.7 per cent of uranium-235.
- The process of enrichment can be carried out through gaseous diffusion, gas centrifuges or laser isotope separation.
- Only six nations own and operate these submarines currently: China, France, India, Russia, the UK and the US.

Types of nuclear-powered submarines

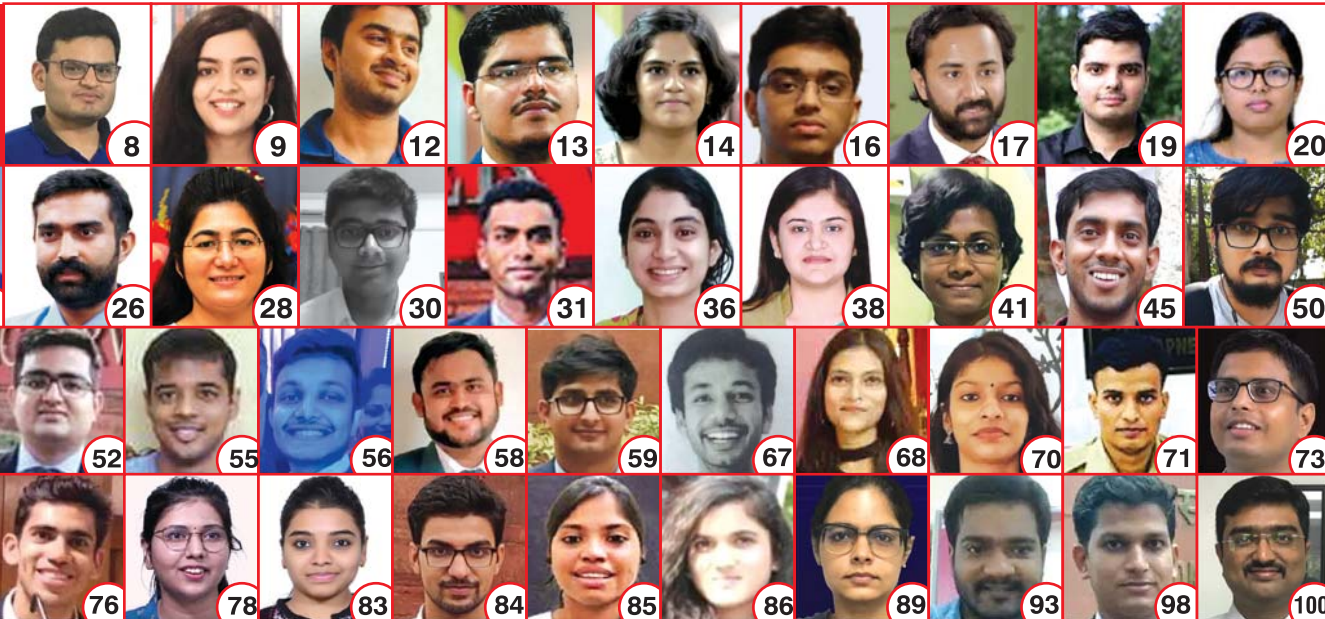
- Nuclear-powered submarines can be divided into three broad categories:
 - the nuclear-powered fast-attack submarines or SSNs
 - the nuclear-powered ballistic submarines or SSBNs
 - the nuclear-powered cruise missile submarines or SSGNs
- SSNs are the oldest type of nuclear-powered submarines and the first of these, the American-made Nautilus, was deployed in 1954 by the US.

India and the nuclear submarine industry

- The Navy currently has 15 conventional submarines-
 - eight Russian Kilo class ones
 - four German HDWs
 - three Scorpens and nuclear ballistic missile submarine (SSBN) INS Arihant.
- Second indigenous SSBN Arighat, now in advanced stages of sea trials, is expected to be commissioned next year along with indigenous aircraft carrier Vikrant, which recently began sea trials, the two officials remarked.
- Akula class SSN Chakra, on a decade-long lease from Russia, has been returned recently, slightly ahead of schedule.
- India has already signed a deal for the lease of another such submarine and the project is underway.
- Given the delays, India is also considering leasing one more Akula class SSN.
- It does not have a nuclear-powered conventional attack submarine.

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