

MONTHLY CURRENT AFFAIRS NOV-DEC 2022

for Competitive Exams

The Complete Coverage of All Important
Events from Nov-Dec 2022

PLUTUS
IAS



HIGHLIGHTS

- ▶ FATF'S GREY LIST
- ▶ BMD SUCCESSFULLY TESTED
- ▶ POK REUNITES WITH INDIA
- ▶ LVM3-M2/ONE WEB INDIA-1, INDIA-1, INDIA'S HEAVIEST SPACE VEHICLE
- ▶ BLUE FLAG CERTIFICATION
- ▶ LAKSHMI-GANESH ON INDIAN CURRENCY



UPSC CSE 2021 ACHIEVERS



DIVYA MISHRA
AIR 28



DIVYANSHU CHOUDHARY
AIR 30



ANJALI SHROTRIYA
AIR 44



NIKHIL MAHAJAN
AIR 80



NITISH RAJORA
AIR 268



SURYABHAN ACHHELAL
AIR 488



NEERAJ KUMAR
AIR 550



MAHIMA MADAN
AIR 612

Many more...

Foreword

Dear Aspirants,

This magazine by **Plutus IAS team** is designed in such a fashion that it holistically covers all the relevant and important topics for civil services exam or IAS exam to make aspirants battle or exam ready. **Plutus IAS Current Affairs Magazine** is a secondary source of information, the newspaper will always remain the first source for preparation of current affairs.

Now, current affairs no longer remain the current, it is contemporary affairs. Questions asked in prelims as well as mains test the conceptual clarity of an aspirant. This magazine prepared with an aim to help you understand the interlinkage of both statics and current and internalize those concepts required to crack this examination.

Plutus IAS team wishes you all the best. Prepare for UPSC Civil Services Examination with calm, composed and serene mind with some patience to crack this examination in one go.

Team
Plutus IAS

Sources:

The Hindu | The Indian Express | The Economic Times | Press Information Bureau (keep checking the Features section for imp articles and our weekly PIB Gist) | PRS (only for recent Bills and articles related to them) | IDSA: Institute for Defense Studies and Analysis (keep checking every 2-3 days for in-depth IR articles) | Yojana and Kurukshetra (no need to read all articles – read selectively) | Lok Sabha and Rajya Sabha Debates | NCERTs All standard reference books.

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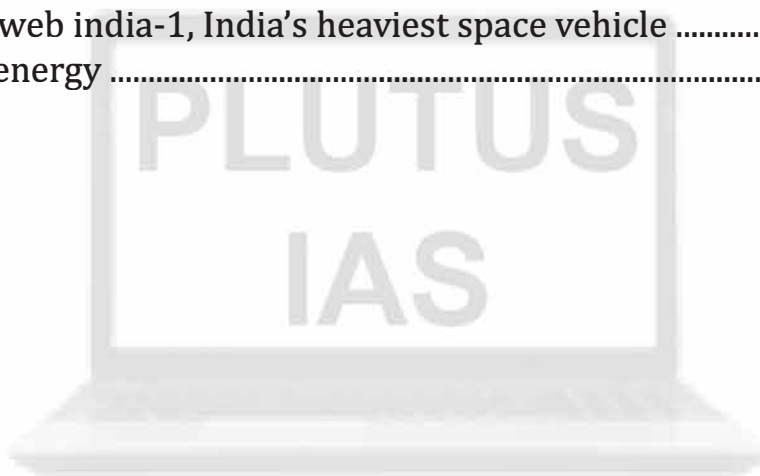
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General studies - 1

(Indian Heritage and Culture, History and Geography
of the World and Society)

GURDWARA PANJA SAHIB

Railway station in Pakistan holds significance in Sikh history

Prelims: historical events of Modern India

Mains: Pakistan and India History, Indian freedom fight

Significance of Prelims: Saka Panja Sahib, Bhai Karam Singh and Bhai Partap Singh

Significance of Mains: Pakistan and India's relationship

Context:

- The management bodies of Gurdwara Panja Sahib from both sides of the border which are the Amritsar-based Shiromani Gurdwara Parbandhak Committee(SGPC) and Pakistan Sikh Gurdwara Parbandhak Committee (PSGPC), together they will observe the centenary of Shaheedi Saka Panja Sahib (martyrdom massacre) at Hasan Abdal city, Punjab province of Pakistan.

Saka Panja Sahib

- Is a heroic event that took place, at Hassan Abdul railway station in Punjab province of Pakistan on 30th October 1922
- On this day two Sikhs died and several other Sikh protesters, including women, were injured at Hasan Abdal railway station when the railway authorities under the then British government did not agree to stop the train carrying Sikh prisoners from Amritsar to Attock.
- The Sikhs wanted to provide (community kitchen food) to the Sikh prisoners, who were from the nearby Panja Sahib.
- However, when they approached the station master at the railway station told the Sikh Villagers that the train would not stop at the station
- To register a protest against this, the Sikhs led by Bhai Pratap Singh and Bhai Karam Singh lay down on the railway tracks and as the train approached,
- The Sikhs were determined to halt the train, continued to protest,
- Committed to their right to provide langar to the Sikh prisoners.
- At last, the train finally came to a screeching halt, but only after crushing many Sikh protesters Bhai Karam Singh and Bhai Partap Singh died after sustaining severe injuries the next day.
- Since then, both Sikhs are eulogized as martyrs of Saka Panja Sahib who sacrificed their lives fighting for the rights of Sikhs against the then British Government of India

Who are these prisoners?

- The original cause of the Hasan Abdal rail massacre lies in another Sikh movement

against the then British Government of India which is Guru Ka Bagh Morcha of Amritsar.

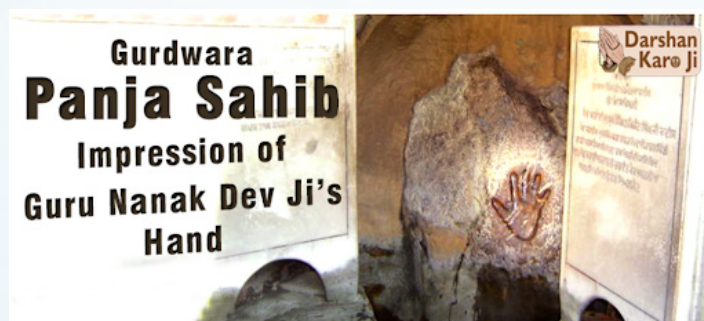
- Hundreds of Sikhs were arrested by the then British Government of India after they had initiated a peaceful campaign against the arrest of five Sikhs who had cut the trees from the land of Gurdwara Guru Ka Bagh to use as wood for cooking langar in August 1922.
- But the then British Government accused them of stealing wood from gurdwara land and arrested them

Gurdwara Panja Sahib



Pic: Gurdwara Panja Sahib

- The history of the shrine Gurdwara Panja Sahib, in Hasan Abdal of Pakistan, is much older than the Saka Panja Sahib incident.
- It was believed that Sikhism's Founder Guru Nanak Dev, along with his companion Bhai Mardana visited the particular place, and later based on this belief, the Sikh community build the Gurudwara there.
- The Saka Panja Sahib which happened later in 1922 put highlighted the Sikh history and made the British rule realize that Sikhs cannot be crushed in the fight for the right over their gurdwaras and Guru's langar.



Pic: Gurdwara Panja Sahib Impression of Guru Nanak Dev Ji's Hand

What is the Visa controversy?

Unfortunately, a controversy flared up before the 100th year of the incident.

It reported that 40 of 157 members of the Sikh jatha of the SGPC were denied visas by Pakistan including

- Three SGPC members (Satwinder Singh Tohra, Khuswant Singh Pannu and Ajmer Singh Khera)
- Darbar Sahib (Golden Temple) granthi Giani Gurminder Singh
- Heads of two Darbar Sahib Hazoori Ragi jathas (group of traditional Gurbani musicians)
- SGPC additional secretary (Dharam parchar) Balwinder Singh Kahlwan
- Additional secretary Bijay Singh.
- Pilgrimage department in-charge Rajinder Singh Rubi
- Dhadis (ballad singers).
- Kavishers (Sikh preachers who recite historic poems) and
- Two Sikh preachers.

Prelims(2019):

Q. Consider the following pairs:

Famous Place	River
1. Pandharpur :	Chandrabhaga
2. Tiruchirappalli :	Cauvery
3. Hampi :	Malaprabha

Which of the pairs given above are correctly matched?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Mains(2018):

Q. Safeguarding the Indian Art Heritage is the need of the moment. Discuss.

Farhine

SITRANG CYCLONE

Prelims: Indian and World Geography-Physical, Social, and Economic Geography of India and the World.

Mains: GS I: Important Geophysical phenomena, geographical features and their location-changes in critical geographical features and in flora and fauna and the effects of such changes.

Context

- Cyclone Sitrang slammed into the densely populated region, it is a low-lying area of the nation, and 24 people were killed.
- It is the 1st tropical of the post-monsoon of 2022, it was developed in the Bay of Bengal and is called Sitarang.
- It was named after Thailand.

Cyclones

- These are a type of low-pressure environment with fast inward air circulation.
- The air flows counterclockwise in the Northern Hemisphere, on the other hand in the Southern Hemisphere, it flows clockwise.
- The cyclone is usually accompanied by violent storms and bad weather.
- Storms and poor weather are often associated with cyclones.
- The *cyclone* word comes from the Greek word Cyclos, which means snake coils.
- The term was invented by Henry Paddington because tropical storms in the Bay of Bengal and the Arabian Sea resemble coiled sea serpents.

Formation of Cyclone

- Cyclogenesis is an important element in the creation and strengthening of cyclones.
- Tropical cyclones happen near the equator over warm ocean water.
- Warm, moist air at the ocean's surface rises upward.
- Which makes a low-pressure zone close to the surface.
- As a result, cooler air from the surrounding areas flows into the low-pressure area.
- Even this cold air is now warm and moist, and it rises.
- This cycle continues likewise.
- The water in the air cools as warm wet air rises, resulting in the development of clouds.
- This cycle repeats itself, resulting in a cyclone.
- A tropical storm happens when winds exceed 63 miles/ hour, and a tropical cyclone or hurricane happens when winds reach 119 miles /hour.

Common names of Cyclone

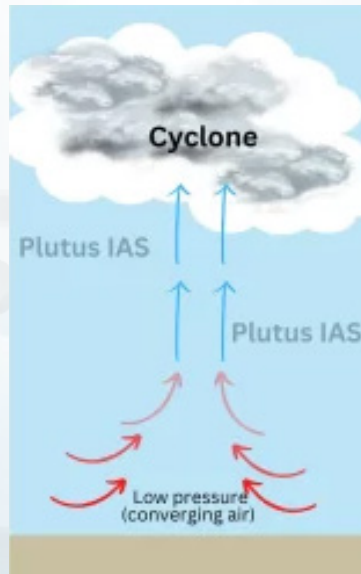
cyclones are referred to by different names, in different areas.

- Hurricanes – In the Atlantic and Eastern Pacific.
- Typhoons – In Southeast Asia

- Cyclone – In the Indian Ocean and Western Pacific around Australia.

Anticyclones

- An anticyclone is the reverse situation of a cyclone i.e. it has an outward-spiralling air circulation
- nearby a high-pressure centre.
- An anticyclone's winds rotate clockwise in the Northern Hemisphere around a centre of high pressure.
- In this situation, air comes in from above and sinks to the ground. High-pressure centres usually have fair weather.



How the cyclones are named?

- An international committee of the World Meteorological Organisation maintains and updates cyclone lists and names (WMO).
- In the original list, only women's names were there.
- In 1979, Men's names were included in the list.
- Men's and women's names are alternately used.
- Six different lists are used in a rotating fashion.
- Hence, the 2020 list will be used again in 2026.
- .For genuine reasons, if the storms have imposed damage on a country, the name will not be mentioned again.
- Such names are
 1. Katrina in the United States (2005),
 2. Sandy in the United States (2012),
 3. Haiyan in the Philippines (2013),
 4. Irma, and Maria in the Caribbean (2017).

Types of Cyclones

On the basis of the prevailing low-pressure system, cyclones are categorized into two types:

- Extra-tropical cyclones.
- Tropical cyclones.

Extratropical Cyclone

- Extratropical cyclones are described the mid-latitude depressions, temperate cyclones, frontal
- Depressions and wave cyclones.
- These cyclones are functions above the mid-latitudinal region between 35° and 65° latitude in
- both the hemispheres.
- In the winter seasons, the direction of movement is from west to east and is more pronounced.
- Fronts are formed in the latitudinal zone where the polar and tropical air masses meet.
- Formation
- The polar front theory explains the origin and development of this.
- As per the theory, the warm-humid air mass from the tropics encounters the dry-cold air masses from the poles and hence a polar front occurs.
- As the cold air mass is denser and heavier, the warm air mass is moved up.
- This interchange of cold and warm air masses creates instability and low pressure is happened at
- the junction, particularly in the centre of interactions.
- Hence, due to low pressure, a void is created. The air around rushed in to occupy
- this void and coupled with the earth's rotation a cyclone is formed.
- These cyclones present a contrast to the more violent cyclones or hurricanes of the tropics, which occurs in regions of relatively uniform temperatures.

Air Mass

- This is a very large body of air whose properties of temperature and humidity at any fixed altitude, are fairly similar.
- It can envelope many hundreds of square miles of area.
- It can have a small amount of horizontal variation in temperature and moisture throughout the air
- mass.
- When an air mass remains over a homogenous area for a considerable long time, it obtains the
- characteristics of the area. The homogenous regions can be the extensive ocean surface or extensive plains.

Fronts

- When two air masses having distinctly different properties meet, the frontier zone between them is known as a front.
- The 4 types of fronts

Stationary front:

When the front remains stationary

Cold front:

The contact zone is termed as the cold front, when the cold air moves towards the warm air mass, the,

Warm front:

When the warm air mass shifts towards the cold air mass, the contact zone is a warm front.

Occluded front:

When an air mass is fully lifted above the land surface, then it is known as an occluded front.

The fronts take place in middle latitudes and are characterized by steep gradients in temperature and pressure.

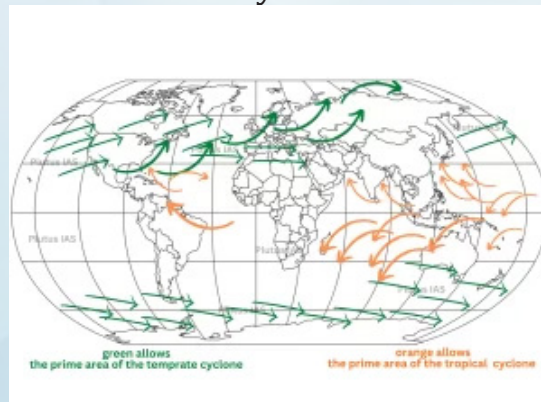
They bring sudden changes in temperature and cause the air to rise to form clouds and cause precipitation.

Tropical Cyclone

- They are violent storms that develop over oceans in tropical areas and shift over to coastal areas.
- It causes huge destruction by violent winds, very heavy rainfall and storm surges.
- The winds move counterclockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.

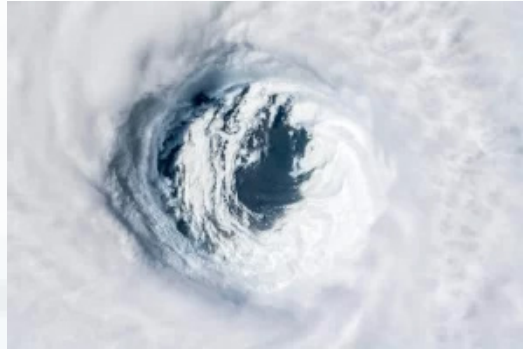
Favourable condition

- Huge sea surface holding a temperature of $27^{\circ}\text{C} +$;
- Presence of the Coriolis force;
- A small change in the vertical wind speed;
- pre-existing weak low-pressure area or low-level-cyclonic circulation;
- Upper divergence above the sea level system.



Eye of the Cyclone

- The “eye” of a cyclone is generally referred to as the circular area of comparatively light winds and fair weather found at the centre of a severe tropical cyclone.
- There is very less precipitation and often blue sky or stars can be seen.
- Particularly, the eye of a cyclone refers to the region, in which it has the lowest surface pressure and warmest temperatures aloft (in the upper levels) –the temperature in the eye can be 10°C warmer or more at an altitude of 12 km than the surrounding environment, however only 0-2°C warmer at the surface in the tropical cyclone.
- Eyes can vary in size from 8 km to over 200 km across, but usually, they are around 30-60 km in diameter.



Eyewall

- The eye is enveloped by the “eye wall”, close to a circular ring of deep convection, it is the area of highest surface winds in the tropical cyclone.
- This region also experiences the highest sustained winds, which means it has the fastest winds in a cyclone that happens along the eyewall region.
- The eye is made of air that is slowly sinking and the eye wall has a net upward flow as a result of many moderate – occasionally strong – updrafts and downdrafts [Explained in ‘Thunderstorms’].
- The eye has temperatures because of the compression warming (adiabatic) of the subsiding air.

Indian tropical cyclones :

- Tropical cyclones that hit India usually originate in the eastern side of India.
- The Bay of Bengal is more vulnerable to cyclones than the Arabian Sea, because, the Bay of Bengal receives high sea surface temperature, and low vertical shear winds and has enough moisture in the middle layers of its atmosphere.
- The frequency of cyclones in the region of the Bay of Bengal is bi-modal, as a result, the Cyclones occur in the months of May–June and October–November.

Indian cyclonic management

India is extremely vulnerable to cyclones. 8% of the total area in India is prone to cyclones.

India has a 7,516 km long coastline, and 5,700 km of the coastline is prone to cyclones of various degrees.

Loss due to cyclones:

- Loss of lives, livelihood opportunities, damage to public and private property and severe damage to infrastructure is the resultant consequences, these losses can disturb the process of development
- Indian Meteorological Department (IMD) is the nodal agency which provides early warning of cyclones and floods.
- Natural Disaster Management Authority is directed to deal with disaster management in India. It has prepared National Guidelines on the Management of Cyclones.
- The Home Ministry has established the National Cyclone Risk Mitigation Project (NCRMP) to upgrade the forecasting, tracking and warning regarding cyclones in states.
- National Disaster Response Force (NDRF) has done a commendable performance in rescuing and managing relief work.

Prelims(2021):

Q. Consider the following statements:

1. In the tropical zone, the western sections of the oceans are warmer than the eastern sections owing to the influence of trade winds.
2. In the temperate Zone, westerlies make the eastern sections of oceans warmer than the western sections

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 and 2

Mains(2019):

Q. How do ocean currents and water masses differ in their impacts on marine life and the coastal environment? Give suitable examples

Farhin

General Studies - 2

(Governance, Constitution, Polity, Social Justice & International Relations)

ANALYSIS OF THE RIGHT TO INFORMATION IN INDIA

Relevance for Prelims: Article 19 of the Indian Constitution, Fundamental Rights

Relevance for mains: Transparency and accountability in Right to Information, Chief Information Commissioner, Right to Information Act, 2005.

Issues pertaining to the Right To Information Act:

- No one should be a judge in their own cause, according to one of the fundamental principles of natural justice. However, there are instances of the commission permitting, or rather wanting the Ministry itself to act as the judge in their own case and determine if a disclosure is required. This is despite the Ministry being accused of breaking the RTI Act.
- The CIC's refusal to consider the Internet Freedom Foundation's appeal of the fresh non-disclosure order issued by the Home Ministry in the phone tapping case led to a similar circumstance.
- In a case that was looking for a disclosure of documents relating to the making of the Unlawful Activities (Prevention) Amendment Act, 2019, the commission has decided to keep the matter pending for final order for a period of more than three months now, something which is unheard of.
- Bureaucrats reject RTIs without any fear, knowing well that they are protected by the Information Commissioners and are not subject to the harsh penalties stipulated in Section 20 of the RTI Act.

About Right to Information:

- Any public body has to accept requests from citizens under the Right to Information Act and citizens are guaranteed to get a response from the Public Information Officer of that body within a time period of 30 days.
- The citizen may file an appeal at the departmental level and then a second and final appeal with the Information Commission in the event of a non-response or disagreement with the response. The State Information Commission in each State hears second appeals involving State agencies.
- It is the Central Information Commission (CIC), at the Centre level.

Right to Information Act, 2005:

- It provides with the rules and procedures with regard to citizens' Right to information.
- The previous Freedom of Information Act of 2002 was replaced by it.
- This law was passed to strengthen the fundamental right, 'freedom of speech' guaranteed in the Indian Constitution. RTI is an implied fundamental right because it is included in the Right to Freedom of Expression under Article 19 of the Indian Constitution.

Some of the important provisions of RTI Act are:

- Section 4 of the RTI Act requires suo moto disclosure of information by each public authority.
- Section 8 (1) discusses exemptions against furnishing information under RTI Act.
- Section 8 (2) provides for disclosure of information exempted under Official Secrets Act, 1923 if larger public interest is served.

Before the 2019 amendment:

Before the 2019 amendment to the RTI Act, Information Commissioners (ICs) that were appointed to the CIC had an equal status with that of the Chief Election Commissioner, and of a Supreme Court judge. Their term of service was fixed to Five years.

Post 2019 Amendment:

Following the 2019 revisions, the Centre granted itself the authority to alter and decide upon the tenure of Election commissioners whenever it pleased, undermining the commission's and its personnel's independence.

RTI's role a few years back:

- It pronounced that political parties were under the ambit of RTI Act, and hence were accountable to the public
- It boldly declared that information regarding the Reserve Bank of India's list of willful loan defaulters and the present Prime Minister's educational background are within the purview of the RTI Act
- The commission was a strong proponent of transparency in public life.

Way Forward:

Citizens must exert significant pressure on the government to take action and designate trustworthy commissioners. Lawyers must assist willing citizens in bringing cases to court and pursuing justice. India will lose its valued right to know if proper steps are not taken.

Further Readings:

Fundamental Rights

Article 19 of the Indian constitution

Freedom of Information Act of 2002

Right to Information Act, 2005

Amendment to RTI Act

Prelims Question

Question: In which section are the rights and functions of the Central Information Commission mentioned?

- 1)18 and 19
- 2)20 and 25
- 3)12 and 17
- 4)13 and 15

Which one of the following is the correct option?

- a)1 and 2
- b)2 and 3
- c)3 and 4
- d)4 and 1

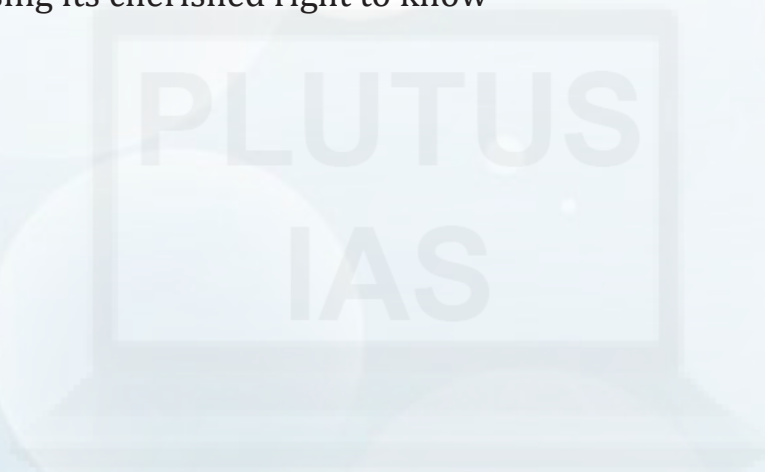
Mains question

Question: Critically examine the importance of the Right to Information (RTI) as a tool of transparency and accountability in governance.

Source: The Hindu

Article: India is losing its cherished right to know

Kajal



SECURITY OF TENURE OF CHIEF ELECTION COMMISSIONERS

Relevance for Prelims: Tenure of Chief Election Commissioner and Election Commissioners

Relevance for mains: Election Commission of India, Article 324 of the Indian Constitution.

News:

A constitution bench of the Supreme Court of India is currently having an ongoing hearing regarding the necessity for an impartial process for the nomination of Election Commissioners, while raising significant concerns about the functional independence of the election body.

Issues pertaining to the tenure of CECs(Chief Election Commissioners):

- According to Justice K.M. Joseph, heading the Bench, compared to recent times, Chief Election Commissioners (CEC) in the past had fairly long tenures.
- Since 1993, the ECI has expanded to include two Election Commissioners(EC) and a CEC(chairman). Presently, ECs are appointed and promoted to CEC status based on seniority. In reality, EC appointments need to be scrutinized because there is a room for personal whimsy to enter the scene.
- The CEC has a six-year term, but is required to retire when they turn 65. The Court has raised concerns about the practice of choosing CECs who are close to that age and giving them a short tenure.
- The Court appears to want to create an independent system, perhaps a selection committee that includes the Chief Justice of India.
- Although it could be claimed that even Chief Justices have short terms in office, this does not call into question their independence. The Government argues that the whole member's time in the ECI, and not only their time serving as CEC, should be taken into account.

Scope for correction:

- There is not much doubt that having an independent body for the selection process will increase the ECI's independence, but the Court must decide whether or not it wishes to specify the makeup of the independent body or leave that decision up to Parliament.

Significance of CEC:

- The position has always played a crucial role in the Indian political system, but during T.N. Seshan's tenure, who served from 1990 to 1996, it attracted a lot of public attention. Seshan is largely acknowledged for making an ardent attempt to stop electoral fraud and corruption in India.

Suggested Reforms:

- In June 2012, Lal Krishna Advani, a veteran politician and former Deputy Prime Minister of India (as well as former Leader of the Opposition in the Indian Parliament), proposed that the Prime Minister, the Chief Justice of India, the Law Minister, and the Leaders of the Opposition in the Lok Sabha and the Rajya Sabha make the appointments for the CEC and the Comptroller and Auditor General of India (CAG), to make it free of partisan.

Concluding Argument:

The main rationale is tenure security, which may result from operational independence and space. Only the CEC has the same status as Supreme Court judges, who may only be removed by Parliament through an impeachment process. On the advice of the CEC, the ECs may be dismissed. Regardless of the appointment procedure used, there is a solid rationale for giving the ECs the same tenure security.

About the Election Commission of India:

- The administration of Union and State elections in India is the responsibility of the Election Commission of India (ECI), an autonomous constitutional authority
- It was established on 25th January, 1950, in accordance with the Constitution. The Commission's secretariat is in New Delhi.
- The body oversees elections for the President and Vice President of India as well as the Lok Sabha, Rajya Sabha, and State Legislative Assemblies.

Structure of Election Commission of India:

- The Election Commissioner Amendment Act of 1989 changed the commission from being a single-member body to one with multiple members.
- The Election Commission shall consist of the Chief Election Commissioner (CEC) and such number of other election commissioners, if any, as the President may from time-to-time fix.
- There are two Election Commissioners and the CEC in it presently.
- The Chief Electoral Officer, an IAS rank Officer, assists the electoral commission at the state level.

Further Readings:

- Article 324 of the Indian constitution
- Election Commission of India.
- Powers and Functions of ECI
- Model Code of Conduct

Prelims Question:

Question: Consider the following statements:

- 1.) Election commission of India consists of a five member body.

- 2.) The Union Ministry of Home Affairs establishes the election schedule for both general and bye-elections.
- 3.) Disputes involving the splitting or merging of recognized political parties are settled by the Election Commission.

Which of the statements given above is/are correct?

- a) 1 and 2
- b) 2 only
- c) 3 and 2
- d) 3 only

Mains Question:

Question : Issues pertaining to the security of tenure of Chief election Commissioner of India should be addressed adequately. Discuss.

Source: The Hindu

Article: Space, not time: On Election Commissioner tenures

Kajal

ANALYSIS OF THE DIGITAL PERSONAL DATA PROTECTION BILL

Relevance for Prelims: The Digital Personal Data Protection Bill, 2022

Relevance for mains: Provisions related to Digital Personal Data Protection Bill, Cyber security, Personal data protection.

News:

- A new version of the Personal Data Protection Bill, now known as the Digital Personal Data Protection Bill, 2022, has been released by the Union Government.
- This draft appears to be an effort to improve prior revisions after the government withdrew an earlier version by proposing to create a “comprehensive legal framework” on data protection and Internet governance.
- After the 2019 Personal Data Protection Bill was withdrawn, the bill was introduced three months later.

Changes to be introduced:

- Now, a notice is to be given for the data principal's consent, and the fiduciaries should be able to remove any stored or intended for sharing with others such data if the consent is withdrawn.
- The new draft suggests the creation of a Data Protection Board of India, whose composition and strength, the selection procedure, etc. will be outlined by the Union government.
- The proposed board's relationship with the Union government will not be sufficiently independent, which is a worry given that the state also collects a significant amount of personal data.
- The new draft proposes the establishment of a Data Protection Board of India, whose strength and composition, the process of selection, etc. will be prescribed by the Union government



Pic: Digital Personal Data Protection Bill

Limitations of the new data protection bill:

- Contrary to the 2018 version, the latest draft does not make reference to important data protection principles such collection limitation, which requires data fiduciaries to only gather personal data that is necessary for processing.
- Additionally, it excludes obligations on data fiduciaries to reveal to principals information regarding beneficiaries of data sharing, the length of storage, etc. As a result, data principals are no longer fully protected, as seen by the absence of transparency on how data fiduciaries are using their personal data.
- For simplicity, there are just 30 clauses, however this leaves some privacy safeguards' details unclear.

Pros of the new data protection bill:

- An important provision on fiduciaries notifying principals and the data protection authority about data breaches in stored records is included in the agreement.
- The measure provides that people should be able to “access basic information” in the languages included in the Indian Constitution’s eighth schedule.
- The ability to request the deletion and updating of data gathered by the data fiduciary shall be granted to data principals.

The significance of the Digital Personal Data Protection Bill:

- In contrast to the contentious necessity of local storage of data within India’s territory in the previous Bill, the new Bill allows major allowances on cross-border data transfers.
- It takes a comparatively accommodative stance on the need for data localization and allows data flow to a few worldwide locations, which is expected to encourage trade agreements between nations.
- The PDP Bill, 2019, did not recognise the data principal’s right to posthumous privacy (Withdraw Consent), which the current Bill does.

India’s trajectory on Personal Data Protection:

- Justice K. S. Puttaswamy (Retd) vs Union of India 2017: Justice K. S. Puttaswamy (Retd) v. Union of India, decided by a nine-judge Supreme Court panel in August 2017, established India’s basic right to privacy as an integral component of life and liberty under Article 21.
- B.N. Srikrishna Committee 2017: In August 2017, the government established an expert committee for data protection, which was headed by Justice B N Srikrishna. The group’s report and a draft data protection bill were both submitted in July 2018.
- The report makes numerous proposals for strengthening India’s privacy laws, including those for a Data Protection Authority, the right to be forgotten, data localization, and limitations on data processing and gathering

Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules 2021:

- Social media sites are required to take greater care with the content they host.

Further Readings:

Information Technology Rules, 2021

Personal Data protection Bill, 2019

Articles 19 of the Indian constitution

Cyber security

Prelims Question:

Question: Under which Article is Right to Privacy protected?

1. Article 21 2. Article 15 3. Article 24 4. Article 18

Mains Question:

Question: Examine the scope of fundamental rights in light of the most recent Supreme Court decision regarding the right to privacy.

Kajal

ANALYSIS OF ECONOMICALLY WEAKER SECTIONS (EWS) RULING

Relevance for Prelims: about the 103rd amendment.

Relevance for Mains: Provisions of Indian constitution on reservation, amendments, and basic structure.

News: The question of constitutionality of the 103rd amendment that deals with EWS reservation has led to a debate

The dissenting judgment versus the judgment in support of 103rd amendment:

- The 103rd amendment to the Indian constitution inserted article 15(6), 16(6) to the constitution permitting 10% reservation to those coming from Economically Weaker Sections, in educational institutions and public employment.
- Discrimination on the basis of religion, ethnicity, caste, sex, or place of birth is forbidden by Article 15. Equal opportunity is guaranteed under Article 16 in terms of public employment. As it does for SCs, STs, and OBCs, the extra sections granted Parliament the authority to enact specific legislation for EWS.
- A commission led by Major General (retired) S R Sinho made recommendations that led to the EWS reservation being approved. The commission, which the UPA administration established in March 2005, turned in its report in July 2010.

The dissent argues:

- The 103rd amendment violates the basic structure of the constitution.
- Equality is an integral part of the basic structure of the constitution.
- A large section of poor come from the the dalit, adivasi and bahun communities.
- The UN committee on Economic, social and cultural rights states that 'discrimination may cause poverty, just as poverty may cause discrimination.
- The concept of intersectionality holds relevance, which means the way various forms of inequality often operate and exacerbate each other.
- Reservations based on caste are considered to be not privileges but reparative meant to level the space for communities facing social stigma.

Essence of Equality:

- The dissent talks about the link between, equality, non discrimination and abolition of untouchability.
- Article 15(1) plays an important role in Equality code.
- Article 17 talks about abolition of untouchability in any form.
- Article 17 and 15(1) are said to be part of the basic structure of the constitution.
- Articles 14, 15, 16 and 17 are said to promote inclusiveness of all sections of the society.

Benefits of the Act:

- Lowers Poverty: It should assist the less fortunate among the higher castes. They

will have a better opportunity in getting employment and escape their precarious situation.

- Reduction of fictitious beneficiaries: It would end the desperation of individuals who, in the past, turned to obtaining fictitious Scheduled Caste (SC) and Scheduled Tribe (ST) certificates.
- Social justice will be ensured since the poor will be given more power and will be able to afford to purchase necessities like shelter, food, and water.
- Lessen the burden of subsidies and fiscal pressure: As more people are pulled out of poverty, less money will be spent on subsidies and other social issues.

Drawbacks of the Act:

- Lack of impartiality: Without conducting a careful investigation or gathering exhaustive evidence from any panel, the government arrived at the percentage of 10%. 10% is therefore not justifiable.
- Discredits the notion of social justice: According to the idea of social justice, “equal treatment of equals” and “affirmative action for less advantaged sections” are required. Articles 330 to 342 of Part 16 of the Constitution details unique protections for only four classes: SCs, STs, Backward Classes, and Anglo Indians. As a result, an unequal status will occur.
- The 10% reservation will be added to the current 50% reservation cap for the Scheduled Castes, Scheduled Tribes, and Other Backward Classes, bringing the total reservation to 60%, in violation of the Basic Structure Doctrine. This will be a violation of Basic Structure Article 14 (Right to Equality).

Further Reading:

- Procedures of Amendment
- Basic Structure
- Debate on philosophy of reservation
- Idea of Dalit Capitalism as a replacement to reservation.

Prelims Question:

Question: What is the 103rd Amendment act related to?

1. 33% Reservation for women
2. National commission for backward classes
3. 10% reservation for EWS
4. Removal of seats for anglo indian community

Mains question:

Question: The 103rd Constitutional Amendment Act replaces the previous caste-based reservation system with a new one that gives preference to the weaker section of the society. Discuss. (250 words) (250 words)

NINTH SCHEDULE

Relevance for Prelims: Reservation, First Amendment Act

Relevance for Mains: Ninth Schedule of Indian Constitution

Context: Recently Jharkhand Assembly has cleared 2 bills which raises the reservations upto 77% which will come into force when Centre carries out amendments to include them in 9th Schedule.

About Ninth Schedule:

- It consists range of central and state laws which cannot be challenged in courts and was added by the Constitution (1st Amendment) Act, 1951.
- The First Amendment added thirteen laws to the schedule. Currently, the number of protected laws stands at 284.
- The schedule was created by new Article 31B which along with Article 31A was brought in by the government to protect laws related to agriculture reforms and abolishing of Zamindari System.

Need of Inclusion in 9th Schedule:

- The 77% reservation breaches the 50% ceiling setup by the Supreme Court in Indra Sawhney judgment in 1992.
- The Jharkhand Assembly has followed the practice of Tamil Nadu which has reserved 69% of seats in colleges and jobs in the state government for Other Backward Classes, Schedule Castes, and Scheduled Tribes.
- Placing a legislation under 9th Schedule shields it from judicial scrutiny.

Supreme Court position on 9th Schedule:

1. **Keshavananda Bharti v. State of Kerala (1973):** The court introduced a concept of Basic Structure which stated amendments which abrogate or take away the essence or basic structure of constitution which included Fundamental Rights are fit to be struck down by the court.
2. **Waman Rao Case (1981):** Amendments made in the constitution before April, 1973 are valid and constitutional but those amendments which were made after the said date are open to challenge on ground of constitutionality.
3. **IR Coelho case (2007):** Any act can be challenged and open to scrutiny by the judiciary if it is not in consonance with basic structure of constitution. In addition, the court observed that if the constitutional validity of any law under the 9th schedule has been upheld before, it cannot be challenged again.

UPSC Previous Year Prelims Questions:

Q1. Consider the following statements: (2018)

1. The Parliament of India can place a particular law in the Ninth Schedule of the Constitution of India.

2. The validity of a law placed in the Ninth Schedule cannot be examined by any court and no judgement can be made on it.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Q2. The Ninth Schedule was introduced in the Constitution of India during the prime ministership of (2019)

- (a) Jawaharlal Nehru
- (b) Lal Bahadur Shastri
- (c) Indira Gandhi
- (d) Morarji Desai

Mains UPSC PYQ

Q1- What was held in the Coelho case? In this context, can you say that judicial review is of key importance amongst the basic features of the Constitution? (2016)

Rishabh

THE BLACK SEA GRAIN INITIATIVE

Details on topic “**The Black Sea Grain Initiative**”

Relevance for Prelims: Recent initiatives in Global Arena, International groupings

Relevance for Mains: Global Supply Chain Initiative and associated issues

Context: Russia has recently joined Black Sea Grain initiative which endeavors to tackle increase prices of grains because of Ukraine-Russia conflict.

About Black Sea Grain Initiative:

- The deal is brokered by the **United Nations** and **Istanbul** in July’22 to fight the escalating prices of food grains emanating from supply-chain disruptions from Russia-Ukraine conflict.
- The deal is signed to provide safe maritime humanitarian corridor for Ukrainian exports (specifically for food grains) from its key ports.
- Release of grains from Ukraine (*World’s breadbasket*) will help in ensuring calm in markets, thereby limiting food inflation.

Need of this initiative:

1. **Largest Exporter:** Ukraine is among the largest exporters of wheat, maize, rapeseed, sunflower seeds, and sunflower oil in world.
2. **Accessibility:** It also has access to deep-sea ports in Black Sea enabling it to directly reach Russia and Europe along with grain importers from West and Africa.
3. **Russia’s Activity:** Russia’s actions in the East European country had disturbed this route which earlier used to ship 75% of its agricultural exports — precisely what the initiative sought to address.

Significance of this initiative:

- **The Food Price Index** assessed by **Food and Agricultural Organization** fell for sixth consecutive time in a row during September.
- Around **1 million tonnes** of grains have been shipped since the initiative have commenced.
- **More than 50% of the grains** have been shipped to *middle-income and lower-income countries* ensuring equitable distribution.

According to the experts from **International Food Policy research institute**, notwithstanding its reach, the initiative in an isolated manner cannot address global hunger and can only delay the chances of global food hunger crisis.

About Black Sea:

The Black Sea is located at the south-eastern extremity of Europe. It is bordered by Ukraine to the north, Russia to the northeast, Georgia to the east, Turkey to the south, and Bulgaria and Romania to the west.



Prelims(2018):

Q. The Partnership for Action on Green Economy (PAGE), a UN mechanism to assist countries transition towards greener and more inclusive economies, emerged at

- (a) The Earth Summit on Sustainable Development 2002, Johannesburg
- (b) The United Nations Conference on Sustainable Development 2012, Rio de Janeiro
- (c) The United Nations Framework Convention on Climate change 2015, Paris
- (d) The World Sustainable Development Summit 2016, New Delhi

Mains (2020):

Q. Critically examine the role of WHO in providing global health security during the COVID-19 pandemic

Rishabh

HINDUS AS MINORITIES

Tagging Hindus as minorities.

Prelims: Indian Polity and Governance-Constitution of India, Political System, Panchayati Raj, Public Policy, Rights Issues, etc.

Mains GS paper II: Indian Constitution, Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

Significance of Prelims: article 29,30,350-B, NMC body

Significance of Mains: T.M.A. Pai Foundation v/s State of Karnataka, The centre's stand, Supreme court decision

Context

- To complete the consultation on demands to permit minority status to Hindus in some states where their number has decreased, the centre has asked for some more time from The Supreme Court.
- The Centre stated that "the matter is sensitive in nature and will have far-reaching ramifications"

Back-story

- Advocate Ashwini Upadhyay has put a petition, contending that the 2011 census showed that the Hindus have become a minority in many states like Lakshadweep (2.5%), Mizoram (2.75%), Nagaland (8.75%), Meghalaya (11.53%), J&K (28.44%), Arunachal Pradesh (29%), Manipur (31.39%), and Punjab (38.40%),
- But we're still being denied minority benefits that are currently being enjoyed by the respective minorities communities in these states

Who are considered minorities in India?

- At present, the communities notified under section 2 (c) of the National Commission for Minorities Act(NMC), 1992, by the central government are considered a minority.

In T.M.A Pai's Case, the 11-judge bench judgment of the Supreme Court had clearly set that linguistic and religious minorities must be identified at the state level rather than at the national.

Despite this, Under Section 2(c) of the National Level Act 1992, the Centre has the "unbridled power" to inform Minorities.

- Minorities Commission (MC) was renamed as National Minority Commission NMC in 1992, with the enactment of the NMC Act 1992.
- It became a statutory body.
- The 1st statutory National Commission was set up in 1993.
- 5 religious communities are notified as Minority communities they are Muslims, Christians, Sikhs, Buddhists and Zoroastrians (Parsis)
- Jains were also notified as a minority community, in 2014.

Constitutional Provisions for Minorities

Article 29:

- According to this article “any section of the citizens residing in any part of India having a distinct language, script or culture of its own shall have the right to conserve the same.”
- It gives protection to both linguistic Minorities as well as religious minorities.
- Although, the supreme court stated that the scope of this article is not necessarily restricted to minorities only, as the use of the word ‘section of citizens’ in the Article states that it includes the Minority as well as the Majority.

Article 30

- This article states that “whether based on religion or language, shall have the right to establish and administer educational institutions of their choice.”
- Some special rights enjoyed by minorities are
- Under Article 30(1)(a)
- Minorities enjoy the Right to education as a fundamental right. The whole expenses of BPL card holders on case of poverty, the expenses are taken over by the states because of the compensation to be provided to established institutions elsewhere.
- They are not required to provide admission to children in the age group of 6-14 years up to 25% of seats are reserved for the EWS of the Society

Article 350 –B

- The 7th Constitutional Amendment act 1956 was added to this article.
- According to this article, there will be a special officer appointed by the president of India for Linguistic minorities.
- the officer will investigate all the matters relating to the safeguards given to Linguistic minorities under the Constitution.

T.M.A. Pai Foundation v/s State of Karnataka

- The petitions asserted that the Hindus of many states don't have the minority status, where they are “socially economically- and politically non-dominant and numerically inferior.”
- The plea contends that **their right under Articles 29-30 is being siphoned off illegally to the majority community in the state because the Centre has not notified them as a `minority` under the National Commission for Minorities Act.**
- The **plea challenges Section 2(C) of the NMC Act 1992, which declared Muslims, Christians, Buddhists, Parsis, Sikhs, and Jains as minorities at the national level and sought direction for district-wise identification of minorities and state-wise status.**
- Depending on statistics of Hindus, the petitioner calls attention to the numbers which are **1% in Ladakh, 2.75% in Mizoram, 2.77% in Lakshadweep, 4% in Kashmir, 8.74%**

in Nagaland, 11.52% in Meghalaya, 29% in Arunachal Pradesh, 38.49% in Punjab, 41.29% in Manipur. However, the Centre has not declared them as a 'minority'.

The centres stand

- The Centre responded to it, stating the petitioners' argument is not correct **since states can also "certify institutions as being minority institutions** according to the rules of the said state.
- The Centre explained that **Maharashtra had notified Jews as a minority community in 2016 and Karnataka had notified Urdu, Telugu, Tamil, Malayalam, Marathi, Tulu, Lamani, Hindi, Konkani and Gujarati as minority languages.**
- **Parliament and State legislatures have concurrent powers to enact laws to provide for the protection of minorities** and their interests.
- The **TMA Pai ruling also "reveals that the SC has nowhere eroded the power of the Central Government to notify a community as a 'minority'.**
- The **Parliament was empowered under Article 246 of the Constitution read with Entry 20, "economic and social planning", of the Concurrent List to enact laws to promote and protect the interests of minorities.**

Conclusion:

It is a fact that liberal democracy is known for the protection of minorities. This is what Ambedkar believed to be a crucial test for a democracy that believes in the dignity of Individuals. The recognition of the rights of Hindus will enhance the quality of democracy in India itself.

Sources

Thehindu
TheIndianExpress
LegalserviceIndia

Further readings

National Commission for Minorities Act(NMC), 1992
Why India's minority groups are not in danger concurrent powers

Prelims(2021):

Q. With reference to India, consider the following statements:

1. There is only one citizenship and one domicile.
 2. A citizen by birth only can become the Head of State.
 3. A foreigner once granted citizenship cannot be deprived of it under any circumstances.
- Which of the statements given above is/are correct?

- (a) 1 only
(b) 2 only
(c) 1 and 3
(d) 2 and 3

Mains(2019):

Q. "The reservation of seats for women in the institution of local self-government has had a limited impact on the patriarchal character of the Indian political process". Comment.

FATF'S GREY LIST

Pakistan's removal from the FATF grey list signifies.

Prelims: Current events of national and international importance, international bodies. about FATF

Mains: GS paper II: Important International institutions and function, agencies and fora- their structure, mandate

Significance of Prelims; FATF, grey list and black list, FATF Recommendations

Significance of Mains: objectives of FATF, enlisting of the grey list and black list, the geopolitics of Pakistan, India's reaction.

Context:

- The Financial Action Task Force (FATF) has recently announced that they will remove Pakistan from its "Grey List."
- This announcement of FATF was unexpected and it also raises concerns for India.

What is FATF?

- The FATF stands for Financial Action Task Force was established in 1989,
- It is an intergovernmental body formed in Paris during the G7
- Its Secretariat is situated at the Organisation for Economic Cooperation and Development (OECD) headquarters in Paris.
- The purpose of FATF are as follows:

The objectives of the FATF are to

- (a) set standards and promote effective implementation of legal, regulatory and operational measures
- (b) To combat money laundering
- (c) check the finances provided to the Terrorist groups, and
- (d) Other threads related to the integrity of the international financial system.

At present the FATF is made up of 37 members jurisdiction and 2 regional organizations, representing nearly all of the major financial centres across the world

This is the reason why FATF is a "policy-making body", which functions to generate the necessary political will to bring about the national legislative and regulatory reforms in these regions

Two Listing by FATF:

Grey List:

- The countries which are taken into consideration as safe havens for sustaining terror funding and money laundering are listed in the grey list.
- When a country is added to the Grey list it is considered a warning to the country that it may enter into the black list in future.

Black List:

- The countries which are involved in terror funding and money laundering activities were enlisted to the blacklist.
- These countries are termed as Non- Cooperative.
- The FATF revises the blacklist regularly adding or deleting entries.

Objectives of FATF

- It pulls out a list of guidelines termed the “FATF Recommendations or FATF standards”
- This FATF recommendation consists of a range of regulatory and enforcement actions that countries are supposed to implement
- More than 200 countries and jurisdictions are devoted to implementing the recommendations of FATF.
- The consensus between the FATF and its associate or regional member like the Asia Pacific Group on Money Laundering (APG) takes the decision against a country.

Implementation of the recommendations of FATF

It monitors the implementations through the periodic evaluation

- Anti-money laundering (AML)
- Combating the financing of terrorism (CFT)
- Proliferation financing system (PF system).

Enlisting the countries into the Grey and Black list

- When the FATF finds the countries have strategic deficiencies in AML/CFT/PF regimes are put under a scheme of increasing monitoring which is also called a ‘Grey listing’
- Once the countries were put on the grey list are supposed to take the needed steps to address their deficiencies on the basis of the “Action plans ” pulled out and checked by FATF
- This Grey list functions like a warning to countries
- Countries that have major strategic deficiencies in their AML/CFT/PF regimes are enlisted to “High-Risk Jurisdiction” also known as “Black list ” put through a Call for Action.
- The black list has serious economic consequences by increasing heck on the transaction made to the labelled country
- At present, there are 23 countries enlisted on the FATF’s “Grey list” excluding Pakistan, and 3 countries names North Korea, Iran and Myanmar enlisted on the “Black list”

How grey list helped to counter terrorism in Pakistan?

- Till now Pakistan has been put 3 times on the grey list and taken off it. In June 2018, it was put on the list for 3rd time.
- In June 2010, when it was removed from the list after it supposedly “demonstrated progress” in improving its AML/AFT regime.
- The FATF members have stated that the adherence to FATF standards by a country should be judged on the basis of the “effectiveness” of action taken against individuals and entities of concern, rather than pro-forma-based “technical compliance”.
- FATF’s approach was taken against Pakistan which escalated a further threat of being blacklisted. These efforts made Pakistan prosecute, convict, fine and jail, the wanted terrorists.

Geopolitical favours to Pakistan

- The good relations of Pakistan with FATF members like China, Malaysia, Turkey and Saudi Arabia helped Pakistan in moving from the grey list to the black list.
- The decision of Moving Pakistan from the grey list to the black list could have been opposed by them.

How should India react?

- In spite of the fact, that there has been a reduction in terrorist activities across the Line of Control (LOC) in Jammu and Kashmir. But frequent observation of drones carrying weapons payloads and infiltration along the LAC indicates the future danger for India
- Hence, India must be prepared and should continue with accessible opportunities to counter the terrorist attacks

Sources

The Indian Express

Further reading

- What are LOC and LAC?
- India and Pakistan diplomatic relations.
- G7
- Members of FATF

Q. 'Broad-based Trade and Investment Agreement (BTIA)' is sometimes seen in the news in the context of negotiations held between India and

- (a) European Union
- (b) Gulf Cooperation Council
- (c) Organization for Economic Cooperation and Development
- (d) Shanghai Cooperation Organization

Mains(2017):

Q. The scourge of terrorism is a grave challenge to national security. What solutions do you suggest to curb this growing menace? What are the major sources of terrorist funding?

Farhin

ATTACK OF DIRTY BOMB

Moscow to New Delhi and Beijing, about the dirty bomb attack by Ukraine Syllabus

Prelims: Current events of national and international importance, topics related to the scene and.

Mains: GS paper II: Effect of policies and politics of developed and developing countries on India's interests, Indian Diaspora

Significance of Prelims: Dirty bomb, the atomic bomb.

Significance of Mains: Ukraine and Russia relationship, India counter step, use of Dirty bomb, a difference between of dirty bomb and the atomic bomb.

Context:

- Russian defence minister convey Moscow's concern about a purported Ukrainian plan to use a "dirty Bomb" to Mr Sergei Shoigu, the Defence Minister of China and Rajnath Singh, the Defence minister of India.

What does Russia allege?

- Moscow sent a letter detailing its allegations about Kyiv to the United Nations late on Monday, and diplomats said Russia planned to raise the issue at a closed meeting with the Security Council on Tuesday(22nd October).
- Lieutenant General Igor Kirillov, the head of Russian nuclear, biological and chemical protection troops, stated before the media briefing Ukraine's aim for such an attack would be to blame Russia.
- "The aim of the provocation would be to accuse Russia of using a weapon of mass destruction in the Ukrainian military theatre and by that means to launch a powerful anti-Russian campaign in the world, aimed at undermining trust in Moscow."

What is the response of Ukraine and the West?

- Kyiv and its Western allies say Moscow's allegation that Ukraine would intentionally make some of its own territory uninhabitable is absurd, especially at a time when Ukrainian forces are recapturing territory on the battlefield.
- In a joint statement, the United States, Britain, and France called the Russian allegations "transparently false" and warned Moscow against using them as a "pretext" for escalation.
- The Kremlin warned the West on Tuesday(22nd October)it was dangerous to dismiss Moscow's position.
- Ukrainian President Volodymyr Zelensky suggested Moscow might be using the allegations as cover for plans for a similar attack of its own:
- "If Russia calls and says that Ukraine is allegedly preparing something, it means one thing: Russia has already prepared all this."

About Dirty Bomb

- It is a dispersion device that contains radioactive material, mostly uranium, but more expectedly low-grade material like caesium -137 or other radioactive materials which are commonly used.
- It is used in a nuclear bomb, it does not require to contain highly refined radioactive material. As an alternative, it can use radioactive material from hospitals, nuclear power stations or laboratories.
- Because of this reason, it becomes cheaper as well as it is easier to put it together in comparison to other nuclear weapons.
- For: they are so small they can be carried in the back of a vehicle

What are the concerns:

- As most of the people in the targeted area will have sufficient time to escape prior to the lethal doses of radiation, the instantaneous health impact is expected to be limited.
- As humans cannot see, smell, feel or taste radiation, it could be dangerous to health if it is inhaled because the radioactive dust and smoke can diffuse in the air and spread farther away.
- Evacuation from an urban area or abandoning a whole city can massively damage the economy.

Why are dirty bombs used?

- A dirty bomb has not been used to date.
- These bombs might be used to create mass panic as a weapon of terror
- The contamination and decontamination of victims, along with this decontamination of the effects on the area can take a long time and expense too.
- Restoring the areas partly unusable and causing economic damage

How dirty bomb is different from the atomic bombs used in Hiroshima and Nagasaki?

They are totally different

Atomic bomb	Dirty bomb
The atomic explosions that occurred in Hiroshima and Nagasaki were caused by nuclear weapons	A dirty bomb is a conventional explosive device that has been adapted to spread radioactive material and contaminate only a small area.
involves the splitting of atoms and a huge release of energy that produces the atomic mushroom cloud.	the material will disperse as a result of the explosion, areas near the blast will be contaminated.

When the dynamite or other explosives are set off, the blast carries radioactive material into the surrounding area.

The level of contamination will depend on how much

radioactive material was in the bomb, as well as the weather conditions at the time of the blast.

What are the Indian government's steps

- New Delhi issued an advisory on 19th October,
- Warning its citizen against travelling to Ukraine
- and asking students who returned to the country to leave in view of the “deteriorating security situation”.

Sources

The Indian Express

NDTV

Further, read:

Russia -Ukraine War

Geopolitical relations between Russia and Ukraine

Geographical locations.

Prelims(2018):

Q. What is "Terminal High Altitude Area Defence (THAAD)", sometimes seen in the news?

- (a) An Israeli radar system
- (b) India's indigenous anti- missile programme
- (c) An American anti -missile system
- (d) A defence collaboration between Japan and South Korea

Mains(2021):

Q. The USA is facing an existential threat in the form of a China, that is much more challenging than the erstwhile Soviet Union.” Explain

Farhin

DOCTRINE OF PLEASURE

About Doctrine of Pleasure:

Significance for Prelims: Role of governor in appointing ministers, Article 164 of Indian Constitution.

Significance for Mains: Centre-State Relations, Office of Governor, and issues associated with discretionary powers

Context: The Kerala Governor recently stated that the Finance Minister of Kerala ceases to enjoy his pleasure in pushing the Kerala government into a legal and political predicament.

It was developed in the United Kingdom where British Monarchy enjoys unique powers as all subordinates serve at the monarch's pleasure and are subject to dismissal at any time.

In India, "Article 310" codifies the "Doctrine of Pleasure in Constitution" which says every person in the defense or civil service of the Union holds office at the pleasure of the President, and every member of the civil service in the States holds office during the pleasure of the Governor.

Under Article 164, the Chief Minister is appointed by the Governor; and the other Ministers are appointed by the Governor on the CM's advice. It adds that Ministers hold office at the pleasure of the Governor.

In a constitutional scheme in which they are appointed solely on the CM's advice, the 'pleasure' referred to is also taken to mean the right of the Chief Minister to dismiss a Minister and not that of the Governor. In short, the Governor of an Indian State cannot remove a Minister on his own.

Doctrine of Pleasure



Pic: Indian Constitution

Discretionary Powers with the Governors:

- Reservation of a Bill for the President's reconsideration
- When given administrators' charge, actions can be taken at will.
- Send report to the President for consideration of Constitutional Emergency
- When s/he calls upon the Chief Minister to seek information regarding administrative and legislative affairs.

Steps were taken to reform the Office of Governor:

Sarkaria Commission (1983): The commission recommended that the Vice-President of India and the Speaker of Lok Sabha should be consulted by the Prime Minister in the selection of governors.

National Commission to review the working of the Constitution (2000): The NCRWC recommended that the Governor should be appointed by the President after due consultation with the Chief Minister of state.

Punchii Commission (2007): The committee recommended Governor should be chosen by the committee comprising the Prime Minister, Home Minister, Chief Minister, Vice-President, and Speaker of Lok Sabha.

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Reference:

1. Asiana Times
2. The Hindu

Prelims(2018):

Consider the following statements:

1. No criminal proceedings shall be instituted against the Governor of a State in any court during his term of office.
2. The emoluments and allowances of the Governor of a State shall not be diminished during his term of office.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Mains(2015):

Q. The concept of cooperative federalism has been increasingly emphasized in recent years. Highlight the drawbacks in the existing structure and the extent to which cooperative federalism would answer the shortcoming

UNICEF REPORT

How heat waves are impacting children globally

Prelims: common issues on Environmental Ecology, Biodiversity, and Climate Change

Mains: GS III: Conservation, environmental pollution and degradation, environmental impact assessment.

Context :

- This news is based on the article published by The Indian Express, titled “UNICEF’s ‘The coldest year of the rest of their lives report’”.The article gives the details of the report released by UNICEF.
- United Nations Children’s Fund,(UNICEF), has released a report named “Coldest Year of the Rest of Their Lives – Protecting children from the escalating impacts of heatwaves”, it shows that by 2050, almost all children across the globe will be exposed to more common and severe heat waves.

United Nations Children’s Fund (UNICEF)

- This was formerly known as United Nations International Children’s Emergency Fund.
- At first, It was initiated in 1946, to provide relief to children in countries shattered by World war II.
- The Headquartered of UNICEF is in New York City
- It is a special program of the UN committed to assisting the national initiatives to upgrade the health, nutrition, education and general studies and general welfare of the children.
- However, after 1950, it was instructed to put, its efforts toward general programs for the improvement of children’s welfare, especially in less-developed countries and many different emergency situations.
- Its aims were reflected when the present name is adopted in 1953.
- UNICEF was honoured with Nobel Prize for Peace in 1965.
- Both government and private contributions finance the activities of UNICEF.
- I also hold-ups immunization programs for childhood diseases and programs to prevent the spread of HIV/AIDS.
- It also provides funding for health services, educational facilities and other welfare services.

The observation of the UNICEF Reports

Current situation :

- About 599 million children across the world are exposed to high frequency and about 624 million children are exposed to one of the three other high heat measures – high heat wave duration, high heat wave severity and extremely high temperature.
- One in every four children lives in regions, where the average heat waves event lasts

4.7 days or longer as in 2022

- It is expected that the ratio will increase by over 3 in every 4 under a low-emission scenario by 2050.
- It was noted that the children belonging to the regions like western and south-eastern Asia, eastern and southern Europe and northern Africa experience heat waves of longer duration.
- What will be its future impacts?
- It is predicted that 2050 the number of children exposed to heat waves will quadruple to over 2 billion by 2050, which will be 24% more than the children exposed to heat waves in 2020.
- This amount is increased to 1.5 billion children till now.
- It is estimated that in 2050 every child on earth will experience severe heat waves in spite of a low greenhouse gas emission scenario with 1.7oC of warming.
- 94% of children expected to be exposed with only small areas of Southern America, Central Africa, Australia and Asia not exposed to high heat waves duration, at 2.4oC of warming
- Extreme atmospheric heat can result in drought, which will cause hurdles in accessing clean drinking water and healthy food.
- The report highlights that the heat waves will result in the stunted development of children and force families to migrate.

Heat waves are



- It is a period of 3 days or more when the maximum temperature every day is in the top 10% of the local 15-day average.
- Dangers of heat waves include heat stroke, heat stress, allergy, chronic respiratory conditions, asthma, mosquito-borne disease, cardiovascular disease, under-nutrition and diarrhoea.

Higher susceptibility of the children's

- As children spend more time outdoors than indoors compared to an adult for activities like sports and other activities, heat waves pose more risk for them, putting them at greater risk for heat injury

How it will put an Impact on Health:

- High temperatures are connected to an increase in mental health issues in children and adolescents
- It also includes post-traumatic stress disorder (PTSD) and depression.
- Utmost heat will essentially influence the children's education and future livelihoods

How it is threatening the Children's Safety:

- Communities are compelled to hunt for resources for and complete over food and water resources as pastures and it also disturbs the household incomes, as a result, the communities' migrates, displacement and conflicts expose children to major physical harm and risks.

4 P's Recommended by THE UNICEF

According to the UNICEF report

- "Heat is especially damaging to children's health and affects their education and future livelihoods.
- It is high time for Individual Countries to some actions :
- Protecting children from climate devastation by encouraging social services
- Preparing children to live in a climate-changed world
- Prioritising children and youth in climate finance and resources
- Preventing a climate catastrophe by reducing greenhouse gas emissions

The 27th Conference of Parties (COP-27) which is going to be held on the 2nd week of November, in Egypt, to the United Nations Framework Convention on Climate Change Bring into the focus of progress on loss and damage, placing the resilience of children and their communities as the topic of the discussions on action and support.

Other related indexes

UNICEF: Climate Risk Index of children.

- It ranks the nations based on the children's exposure to climate and environmental shocks, like heat waves and cyclones, as well as their vulnerability to those shocks, based on their access to
- It ranks countries based on , such as Cyclones and Heatwaves, as well as their vulnerability to those shocks, based on their access to basic services.

Notre Dame Global Adaptation Initiative (ND-GAIN) Index:

- It has reported the impact of climate change on children across the world.
- It describes that the children will be impacted by food shortages, diseases and other health threats, water scarcity, or be at risk from rising water levels or all of these factors.

Prelims(2018):

Q. "Rule of Law Index" is released by which of the following?

- (a) Amnesty International
- (b) International Court of Justice
- (c) The Office of UN Commissioner for Human Rights
- (d) World Justice Report

Mains(2019):

Q. Too little cash, too much politics, leave UNESCO fighting for life.' Discuss the statement in the light of the US' withdrawal and its accusation of the cultural body as being 'anti-Israel bias'.

LAKSHMI-GANESH ON INDIAN CURRENCY

Prelims: Economic, Bodies responsible for taking decisions

Mains: GS III: Indian Economy and issues relating to planning, mobilisation, resources, growth, development and employment.

Context: Leaders of AAP, asked the government of India to put pictures of Goddess Lakshmi and Lord Ganesh on currency notes in order to bring “prosperity” to the country.

Who is the deciding body of the look of Indian Bank Notes?

The Reserve bank of India i.e. RBI, the central bank and the regulatory body along with the Central Government are responsible for the changes in the designs and forms of the banknotes and coins.

The changes in the designs of a currency note in India have to be approved by the Central Body of RBI and the Central Government of India.

The Central government of India has the sole authority to change the design of the coins
RBI's role in issuing currency

According to Section 22 of the Reserve Bank of India Act, 1934, RBI has the “sole right” to issue banknotes in India

According to the Section 25 of the Reserve Bank of India Act, 1934, the design, form and material of the banknotes of India shall be such as may be, after the recommendation of the central board of the RBI, the central government will approve.

The responsibility of administering the main function of currency management is of the Department of Currency Management of the RBI. If the currency note's design has to be changed, this Department works on the design and submits it to the RBI which recommends it to the central government. The final approval comes from the central government of India

Printing of Currency Notes:

There are two currency note printing presses in India and they are owned by the Government of India.

One of these is in Nasik and another one is in Dewas

There are two more printing presses in India one of the two is in Mysore and another one is in Salboni.

These two printing presses are owned by the RBI through its wholly-owned subsidiary,

Bharatiya Reserve Bank Note Mudran Ltd (BRBNML).

About the coin minting

- According to the Coinage Act, of 2011 the central government has the authority to design and mint coins in many different denominations.
- The role of the RBI is limited in the case of coins, to the distribution of these, which are supplied by the central government.
- The government decides on the number of coins to be minted on the basis of indents received from the RBI on a yearly basis.
- The Coins are being minted in four mints owned by the Indian Government.
- They are in Mumbai, Hyderabad, Kolkata and Noida.

The various types of notes issued so far

Ashoka Pillar Banknotes:

The 1st banknote issued after the independence of India in 1949 was the Re 1 note. In the Re 1 note, the portrait of King George was replaced with the symbol of the Lion Capital of the Ashoka Pillar at Sarnath in the watermark window.



Mahatma Gandhi (MG) Series, 1996:

All the banknotes of this series carry the portrait of Mahatma Gandhi on the front side, in place of the symbol of the Lion Capital of Ashoka Pillar, which was moved to the left, next to the watermark window.



Mahatma Gandhi series, 2005:

They have some advanced new security features as compared to the 1996 MG series.



Mahatma Gandhi (New) Series, 2016:

These new notes draw special attention to India's cultural heritage and scientific achievements. The banknote from the new series is of Rs 2,000 denomination — was introduced on November 8, 2016, the theme of this note is Mangalyaan.



Sources: The Indian Express

Prelims(2018):

Q. Which one of the following statements correctly describes the meaning of legal tender money?

- (a) The money which is tendered in courts of law to defray the fee of legal cases
- (b) The money which a creditor is under compulsion to accept in settlement of his claims
- (c) The bank money in the form of cheques, drafts, bills of exchange etc.
- (d) The metallic money in circulation in a country

Mains(2015):

Q. The craze for gold in Indians has led to a surge in import of gold in recent years and put pressure on the balance of payments and external value of the rupee. In view of this, examine the merits of the Gold Monetization Scheme.

Farhin

POK REUNITES WITH INDIA:

The Union Home Minister Rajnath Singh: PoK reunites with India:

- Prelims: geographical locations in the map
- Mains: GS paper 1: Post-independence consolidation and reorganization within the country. GS paper II: India and its neighbourhood- relations.

Context

- Amit Shah, the Union Home Minister said on Thursday(27th October 2022) that States should have a uniform law and order policy as certain crimes such as cross-border terrorism and cybercrimes transcend regional and international boundaries.
- Amit Shah, the Union Home Minister stated that by 2024, to counter terror activities, each State would have a National Investigation Agency (NIA) office as the agency had been given “extraterritorial jurisdiction” and additional powers to confiscate property in terror-related cases.
- He called for the centralization of data on terror and other crimes and said that following the principle of “one data, one entry,” the NIA had been entrusted with the task of maintaining a national terror database, the Enforcement Directorate a dataset on financial crimes and the Narcotics Control Bureau (NCB) on narco crimes

Where are Gilgit and Baltistan-



- Gilgit-Baltistan, earlier it was known as the Northern Areas,
- It is a region that comes under the administration of Pakistan, as an administrative territory,
- This region includes the northern part of the larger Kashmir region which has been

considered as a dispute between India and Pakistan since 1947, and later on and between India and China from

- The region shared the border with Azad Kashmir to the south, the province of Khyber Pakhtunkhwa to the west, the Wakhan Corridor of Afghanistan to the north, the Xinjiang region of China, to the east and northeast, and the Indian-administered union territories of Jammu and Kashmir and Ladakh to the southeast.
- The region, together with Azad Kashmir in the southwest, is grouped and referred to by the United Nations and other international organisations as “Pakistan-administered Kashmir”.
- Gilgit-Baltistan is 6 times larger than Azad Kashmir in terms of geographical area.

A brief history of Gilgit-Baltistan

It was a part of J&K:

- The beautiful region was a part of the Princely state of Jammu and Kashmir, however, it was directly ruled by the British rule, they took this region on lease from Hari Singh, a Hindu king of the Muslim majority states.

Gilgit Scouts rebellion:

- On October 26, 1947, when King Hari Singh agreed to India, there starts a rebellious movement from the Gilgit Scouts.
- They headed to take over the Baltistan, but at that time it was a part of Ladakh, they got captured by the Skardu, Kargil and Dras.
- After a battle, Indian forces retook Kargil and Dras in August 1948.

Pak enters into an agreement with Azad J&K govt:

- When India and Pakistan agreed to a truce in January 1949.
- Pakistan agrees with an agreement with the “provincial government” of “Azad Jammu and Kashmir” the region which was occupied by Pakistani troops and irregular, to take over the foreign and defence affairs.
- The agreement also Azad Jammu and Kashmir government gave the administrative control of Gilgit- Baltistan to Pakistan

Gilgit-Baltistan not recognised as a province:

- When Pakistan adopted its first full-fledged civilian Constitution, in 1974, there are only four listed in the constitution. they are Punjab, Sindh, Balochistan and Khyber Pakhtunkhwa.

- Pok i.e. Pakistan-Occupied Kashmir and Gilgit-Baltistan were not included in the constitutional list as provinces.
- In 1975, PoK adopted its own Constitution, however, it still remained under the control of the Pakistani federal administration and the security establishment, through the Kashmir Council.
- Pakistan brought in the Gilgit-Baltistan (Empowerment and Self-Governance) Order, 2009, In 2009, changing the Northern Areas Legislative Council (NALC) into Legislative Assembly, and the Northern Areas were given back its original name of Gilgit-Baltistan.
- Gilgit-Baltistan observed November 1, 2020, as “Independence Day”, Imran Khan also announced that his government would give the region “provisional provincial status”.

What was happening in Gilgit?

- Presently, the Gilgit area is under the possession of Pakistan,
- The area is currently under the possession of Pakistan, in contravention of the United Nations Commission for India and Pakistan (UNCIP) resolution of 28 April 1949.
- Pakistan occupied the region without the consent of the Gilgit-Baltistan people and, in spite of the UNCIP’s calls for Pakistan to take out their forces from the disputed area, the occupation remains to till date.
- For the last 60 years, the region of Gilgit-Baltistan has lacked a proper constitutional status, a functioning legal system and political autonomy.

What is the significance of Gilgit-Baltistan?

Political and geographical:

- The region is a trijunction, located between three geographical regions southern, central and eastern Asia, it makes one of the world’s most significant geostrategic points, both in terms of politics and geography.

Military significance:

- In a matter of a two-front war against India, control over the Gilgit-Baltistan region can help with drastically affecting and determining the outcome.
- Setting up an advanced Air Force base in Gilgit-Baltistan can ruin the enemy’s confidence and control the movement of conflict to India’s side.

Rich in resources:

- it is a treasure of many earthy resources, the region is rich in mineral deposits.

- One can find, metallic, non-metallic, energy minerals, precious stones and different rocks of industrial use.
- The southern region of Gilgit-Baltistan is rich with substantial deposits of nickel, lead, copper and zircon.
- Towards the northern part, it has deposits of iron, silver, gold, garnet and topaz.
- Almost all of its mining potential is unused and has the capability to boost our economy.

Strategic importance for India:

- Under the CPEC(China-Pakistan Economic Corridor) agreement, Beijing is investing a big amount of wealth, to develop the region as a part of its Belt and Road Initiative, and the concerns of a two-front war the standoff in the Eastern Ladakh in 2020, hence the areas has an increase in the strategic significance for India in light of CPEC.

Sources

The Hindu

The Indian Express

Prelims(2019):

Q. Consider the following pairs:

Glacier	River
1. Bandarpunch :	Yamuna
2. Bara Shigri :	Chenab
3. Milam :	Mandakini
4. Siachen :	Nubra
5. Zemu	Manas

Which of the pairs given above are correctly matched?

- (a) 1, 2 and 4
- (b) 1, 3 and 4
- (c) 2 and 5
- (d) 3 and 5

Mians(2019):

Q. Cross-Border movement of insurgents is only one of the several security challenges facing the policing of the border in North-East India. Examine the various challenges currently emanating across the India-Myanmar border. Also, discuss the steps to counter the challenges.

Farhin

NEELAKURINJI

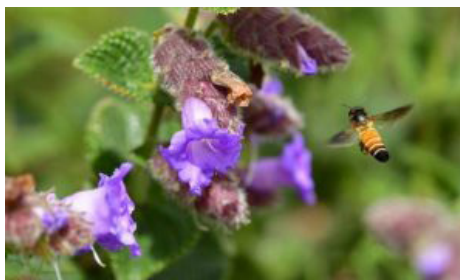
Details on Topic “Neelakurinji”

Relevance for Prelims: Flora in news

Relevance for Mains: None

Context: Neelakurinji (*Strobilanthes kunthiana*), endemic to Western Ghats have bloomed in in kallipara Hills.

About Neelakurinji:



- Neelakurinji, a shrub belonging to the *Strobilanthes* genus, is known for synchronous flowering once in one to 16 years. It is found in shola forests of Karnataka, Tamil Nadu and Kerala. Some species of the shrub are also found in Goa.
- Since it has more than 45 species, the average blooming period of flowers varies from 8-15 years.
- **Nilgiris Hills**, which means blue mountains owe their name from purplish blue flowers of Neelakurinji.
- The local tribal communities (**Hakki-Pikki tribe**) consider the shrub as goddess of forest. The Hakki-Pikkis are known for preparing oils for different ailments from forest produce.
- Kurinjimala Sanctuary of Kerala protects the kurinji in approximately 32 sqkm. Core habitat in Kootakamboor and vattavada villages in Idukki district.
- In Sangam literature of Tamil Nadu, the kurinji flowers stand for love. In Kannada literature, however, there is hardly any reference to the flower.

Prelims(2018):

- a. Which of the following statements best describes "carbon fertilization"?
- b. Increased plant growth due to increased concentration of carbon dioxide in the atmosphere
- c. Increased temperature of Earth due to increased concentration of carbon dioxide in the atmosphere
- d. Increased acidity of oceans as a result of increased concentration of carbon dioxide in the atmosphere
- e. Adaptation of all living beings on Earth to the climate change brought about by the increased concentration of carbon dioxide in the atmosphere

Mains(2018):

Q. How does biodiversity vary in India? How is the Biological Diversity Act,2002 helpful in the conservation of flora and fauna?

Rishabh

General Studies - 3

(Technology, Economic Development, Biodiversity,
Security & Disaster Management)

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES

CITES

The topic is based on How Convention on International Trade in Endangered Species (CITES) impacts the Indian Environment and Climate Change.

Relevance for Prelims: COP19, World wildlife conference, Species in News

Relevance for Mains: Conservation efforts

Context: Recently, the Conference of Parties 19 (CoP19) was held a Panama City.

Highlights of the conference:

India's species (Dalbergia sissoo) is included in Appendix II of the convention, thereby requiring it to follow CITES regulations for the trade of species. Now, relief is provided by easing the CITES rules for the export of Shisham (Dalbergia Sissoo) based products which is going to rev up India's exports.

The CoP (Conference of Parties) has accepted a proposal from India to include sea cucumber (Thelnota) in Appendix II of the Convention.

India's proposal for induction of the fresh-water turtle Batagur Kachuga (Red Crowned Roofed Turtle) has been appreciated by Cop19 of CITES.

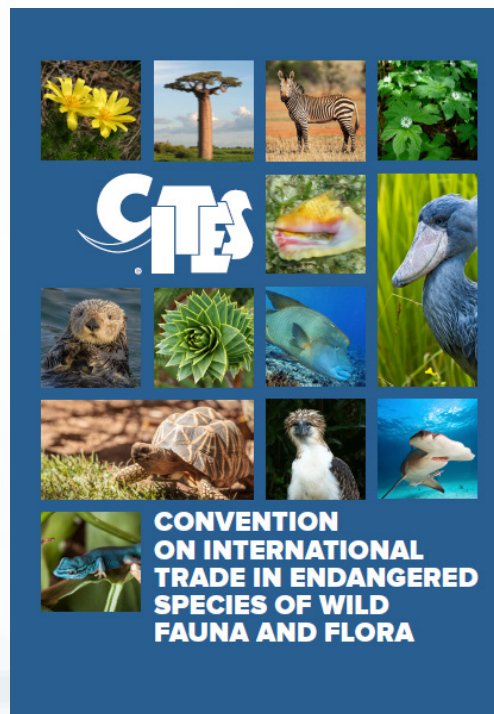
Conservation efforts by India:

- 1. Operation Turtshield:** To curb wildlife crime.
- 2. Wildlife Protection Act, 1972:** many species of turtles and freshwater tortoises which are recognized as critically endangered, endangered, vulnerable, or near threatened are included in WPA, 1971, and given a high degree of protection.

ABOUT CITES

- It is an international agreement between governments 184 (now) to ensure international trade in wild animals and plants does not threaten the survival of the species.
- The convention entered into force in 1975 and India has become the 25th party to join CITES. States that have agreed to be bound by the convention in 1976.
- The signing of the CITES convention is legally binding on the parties meaning thereby they have to implement the convention which does not take place of national laws.

CITES



Pic: Convention on International Trade in Endangered Species

It has three appendices:

Appendix-1: It lists species that are the most endangered among CITES-listed animals and plants.

They are threatened with extinction and CITES prohibits international trade in specimens of these species except when the purpose of the import is not commercial barring scientific research.

Appendix II: It lists species that are not necessarily threatened with extinction but could become so trade needs to be controlled. It includes-so called look-alike species-who specimens in a trade that looks like those of species listed for conservation reasons.

Appendix-III: It is a list of species included at the request of the Party that already regulates trade in the species and that needs the cooperation of other countries to prevent unsustainable or illegal exploitation. Trade of specimens on the international level is only allowed on presentation of appropriate permits or certificates.

Any species that may be added or removed from Appendix I or II could be only done by the Conference of Parties (CoP).

Source

The India Express

Mint

Prelims(2018):

Q. How is the National Green Tribunal (NGT) different from the Central Pollution Control Board (CPCB)?

1. The NGT has been established by an Act whereas the CPCB has been created by an executive order of the Government.
2. The NGT provides environmental justice and helps reduce the burden of litigation in the higher courts whereas the CPCB promotes cleanliness of streams and wells, and aims to improve the quality of air in the country.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Mains(2020):

Q. How does the draft Environment Impact Assessment (EIA) Notification, 2020 differ from the existing EIA Notification, 2006?

Rishabh

FREE TRADE AGREEMENT

The topic is based on the “Free Trade Agreement”. It talks about how the Free Trade Agreement impacts on Indian Economy.

Relevance for Prelims: Free Trade Agreement, Gulf Cooperation Council

Relevance for Mains: Significance of FTA's

Context: India and Gulf-cooperation Council have agreed to pursue FTA.

About Gulf-Cooperation Council:

It is a union of six countries in the Gulf region- Saudi Arabia, UAE, Qatar, Kuwait, Oman, and Bahrain.

SIGNIFICANCE OF GULF- COOPERATION COUNCIL

1. Oil & Gas: India imports more than 40% of its natural gas from Qatar. India's overall crude oil imports. Saudi Arabia was India's fourth-largest trading partner last fiscal. From Qatar, India imports 8.5 million tonnes a year of LNG and exports products ranging from cereals to meat, fish, chemicals, and plastics.
2. Remittance: According to a November 2021 report from the World Bank, India got \$87 billion in foreign remittances in 2021. Of this, a sizeable portion came from the GCC nations.
3. Trade: Bilateral goods in goods and services have increased exponentially.
4. Potential Market: India could increase its exports of food items, clothing, and several other goods are given that the number of Indians has increased. India exports pearls, precious and semi-precious stones; metals; imitation jewelry; electrical machinery; iron and steel; and chemicals to these countries.
5. Free Trade Agreement



Pic: Gulf Cooperation Council

India's exports to the GCC increased by 58.26% to about \$44 billion in 2021-22 against \$27.8 billion in 2020-21, according to data of the Commerce Ministry. The share of these six countries in India's total exports has risen to 10.4% in 2021-22 from 9.51% in 2020-21. Similarly, imports rose by 85.8% to \$110.73 billion compared to \$59.6 billion in 2020-21, the data showed. The share of GCC members in India's total imports rose to 18% in 2021-22 from 15.5% in 2020-21.

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Source:

The Economic Times
Hindustan Times

Prelims(2017):

Q. Consider the following statements:

1. India has ratified to Trade Facilitation Agreement (TFA) of WTO.
2. TFA is a part of WTO's Bali Ministerial Package of 2013.
3. TFA came into force in January 2016.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Mains(2018):

Q. The China Pakistan Economic Corridor (CPEC) is viewed as a cardinal subset of China's larger 'One Belt One Road' initiative. Give a brief description of CPEC and enumerate the reasons why India has distanced itself from the same.

Kajal

CLIMATE CHANGE PERFORMANCE INDEX

Relevance for Prelims: India's rank in the Climate Change Performance Index, Net-Zero.

Relevance for Mains: India's strategy to achieve Net-zero, India's performance and challenges associated.

Context: India jumps 2 spots higher, and now ranks 8th as per CCPI (2023)

About Climate Change Performance Index:

- The CCPI aims to enhance transparency in international climate politics and enables comparison of climate protection efforts and progress made by individual countries. Published annually since 2005, the Climate Change Performance Index (CCPI) is an independent monitoring tool for tracking the climate protection performance of 59 countries and the EU.
- Every year, the Global CCPI sets off important public and political debates within the countries assessed. The climate protection performance of these 59 countries, which together account for 92% of global greenhouse gas (GHG) emissions, is assessed in four categories: GHG Emissions (40% of overall score), Renewable Energy (20% of overall score), Energy Use (20% of overall score) and Climate Policy (20% of overall score).
- The ranking given by CCPI places India as the only G-20 country in the top 10 ranks. It may be mentioned here that India will now be assuming G-20 Presidency and it will be an opportune time to show the World, its climate mitigation policies such as the deployment of renewable sources of energy and other energy transition programs.



Pic: India's Net-Zero Emission Target

ABOUT INDIA'S PERFORMANCE IN CCPI

- India's rank is best among all the large economies. It has been ranked among the top 5 countries in the world and among the best among the G20 countries.

- The country is on track to meet its 2030 emission targets which are compatible well below 2 degrees Celsius. However, the renewable targets are not in consonance with the 2030 targets.

Concerns highlighted:

India has updated its Intentionally National determined Contributions and promised to achieve net zero by 2070. However, no roadmaps and concrete action plans for achieving the targets are missing.

Source:

1. Wikipedia
2. The Economic Times

Prelims(2017):

Q. The Global Infrastructure Facility is a/an

- a. ASEAN initiative to upgrade infrastructure in Asia and financed by credit from the Asian Development Bank.
- b. World Bank collaboration that facilitates the preparation and structuring of complex infrastructure Public-Private Partnership (PPPs) to enable mobilization of private sector and institutional investor capital.
- c. Collaboration among the major banks of the world working with the OECD and infrastructure projects that have the potential to mobilize private investment.
- d. UNCTAD funded initiative that seeks to finance and facilitate infrastructure development in the World.

Mains Question(2018):

Q. Define the concept of carrying capacity of an ecosystem as relevant to an environment. Explain how understanding this concept is vital while planning for the sustainable development of a region.

Rishabh

CLIMATE CHANGE COMPENSATION

Relevance for Prelims: Emissions Gap report, Climate Change compensation

Relevance for Mains: Net Zero, Greenhouse Gas Emissions

Context: In a historical move, U.N climate summit in Egypt (COP-27) has created Compensation Fund to address “Loss and Damage’ due to climate change-induced disasters.

Significance of Compensation:

Data from **Global Carbon Project** shows that between **1751** and **2017**, 47% of the carbon-dioxide emissions came from the 28 countries (27 European Countries and United States).

The aforementioned data suggests it is the developed countries have benefitted from Industrial development which has increased the Emission of Greenhouse Gases.

PM MAKES FIVE PLEDGES <ol style="list-style-type: none">1 India will increase its non-fossil energy capacity to 500GW by 20302 India will meet 50% of its energy requirements from renewable energy by 20303 India will reduce the total projected carbon emissions by one billion tonnes from now to 20304 By 2030, India will reduce the carbon intensity of its economy by 45% (from a previous target of 35%)5 By 2070, India will achieve the target of net zero	WHAT IS NET ZERO? <p>Net zero refers to a balance where emissions of greenhouse gases are offset by the absorption of an equivalent amount from the atmosphere. Experts see net zero targets as a critical measure to successfully tackle climate change and its devastating consequences</p>
	PLEDGES BY TOP THREE EMITTERS <ul style="list-style-type: none">CHINA: Beijing announced no new pledges on Monday. It previously pledged net zero by 2060.UNITED STATES: The US touted domestic legislation to spend \$555bn to boost renewable power and electric vehicles. It has pledged net zero by 2050.INDIA: The country's economy will become carbon neutral by the year 2070

India's Emissions:

India is one of the **top-7 emitters** (others being China, Indonesia, Brazil, Russian Federation, United States, EU-27). Collectively, G-20 members are responsible for 75% of global GHG Emissions.

Average per capital GHG emissions of India stands at **2.4 tonnes of CO₂** (carbon-dioxide) which is way below than United States (14 tonnes), Russia (13), China (9.7).

India's renewable Target:

- The installed renewable energy capacity has been growing rapidly in last few years and enhancement of its target from 450GW to 500GW.
- The government has pledged to increase the proportion of non-fossil fuel energy to 50% by 2030.
- India also has said it does not plan to start any coal power plant after 2022.

Recently, India has achieved **5th rank** globally in solar power deployment surpassing Italy.

- India with total installed capacity of **39.25GW** has the **highest fourth wind installed capacity** in the world.

Significance of Non-conventional sources of Energy:

- Thrust on non-conventional sources of energy can fetch economic gains to India. Shift towards non-conventional sources of energy can bring down the cost of energy supply and can also ensure enhanced energy delivery of affordable clean energy that is accessible to all.
- Apart from environment aspects. The economic benefits are also significant. The transition to renewable energy sources will aid Indian economy to delink itself from volatile international oil prices.
- India could also handhold other developing nations to explore the path of sustainable development via making best utilization of non-conventional sources of energy.

Facilitation of transition to non-conventional energy sources holds the key for India's developmental aspirations. To facilitate a smooth and sustainable transition to non-conventional sources of energy, mobilization of green finance needs to be adopted at a faster pace.

It is also important to further escalate research and developmental spending on domain of clean energy sources, so as to come up with sophisticated enabling technologies.

Prelims(2022):

Q. "Climate Action Tracker" which monitors the emission reduction pledges of different countries is a :

- a. Database created by coalition of research organisations
- b. Wing of "International Panel of Climate Change"
- c. Committee under "United Nations Framework Convention on Climate Change"
- d. Agency promoted and financed by United Nations Environment Programme and World Bank

Mains(2020):

Q. What are the key features of the National Clean Air Programme (NCAP) initiated by the Government of India?

Rishabh

SOFT LOANS BY INDIA

Act East Policy

This article is based on the “Act East Policy”. It talks about India and its neighborhood- relations significance of Soft Loans by India

Relevance for Prelims: Terminology, Statistics vis-à-vis Soft Loans, Act East Policy

Relevance for Mains: Significance of the act, Neighbor relations of India

Context: Foreign Secretary of India and G-2- chief coordinator said the volume of India’s soft loans to neighboring countries has increased from \$3 billion to almost \$15 billion in the last eight years.

About Soft Loans:

- A soft loan is a loan with no interest or a below-market rate of interest, Also known as “soft financing” or “concessional funding,” soft loans have lenient terms, such as extended grace periods in which only interest or service charges are due, and interest holidays. They typically offer longer amortization schedules (in some cases up to 50 years) than conventional bank loans.
- Soft loans are often made by multinational development banks (such as the Asian Development Fund), affiliates of the World Bank, or federal governments (or government agencies) to developing countries that would be unable to borrow at the market rate.

SIGNIFICANCE OF ACT EAST POLICY

1. Promote economic cooperation: The foremost objective of Act East Policy is to integrate economies of South-East Asian regions through continuous engagement at regional, bilateral and multilateral levels.
2. Alternative Traditional partners: More focus on the neighbour economies will make South-Asia region more integrated.
3. North-East Development: Integration with South-east Asian and East-Asian economies will aid in development of North-East states.
4. Security Engagement: India’s defence cooperation with South-Asian economies have increased. For example: In 2014, India and Vietnam signed a MoU (Memorandum of Understanding) to open a line of credit for purchase of defense equipment.



Pic: India and its neighborhood

Concerns:

1. Chinese Dragon influence: Growing Chinese influence with increasing hostilities with India on border areas is a major roadblock to the development of the ASEAN region.
2. There is a scarcity of economic agreements signed between India and South-East Asian economies. So far, India has signed a few agreements on reaping Blue Economy.
3. Civil Society's attitude is impacted by India's majoritarianism attitude over one religion.
4. Protectionist policies have increased which has hindered the integration of economies.

There must be empowering of states by the government to play a better role under the Act. For example, Northeast states could be used to bridge the gaps between the Centre and States while implementing Act East.

Neighboring countries such as Bangladesh and Sri Lanka should also be added which would ensure better development of India's eastern and north-eastern states.

BEST DAILY CURRENT AFFAIRS FOR UPSC

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Source:

The Hindu

Prelims(2017):

Q. India enacted the Geographical Indications of Goods (Registration and Protection) Act, 1999 in order to comply with the obligations to

- (a) ILO
- (b) IMF
- (c) UNCTAD
- (d) WTO

Mains Questions(2017) :

Q. What are the main functions of the United Nations Economic and Social Council (ECOSOC)? Explain different functional commissions attached to it.

NOSTRO AND VOSTRO ACCOUNT

Relevance for Prelims: Nostro, Vostro Account, Balance of payments

Relevance for Mains: Significance of Nostro and Vostro Account, Impact of Global sanctions on economy of India.

Context: Reserve bank of India allowed opening of 9 Vostro accounts in two India banks for settlement in rupee for trade between India and Russia.

About Nostro and Vostro Account:

- Nostro Account is an account held by bank in foreign currency in another bank. It allows customers to deposit money in the bank's account in another bank.
- Nostros, a term derived from the Latin word for "ours," are frequently used to facilitate foreign exchange and trade transactions. The opposite term "vostro accounts," derived from the Latin word for "yours," is how a bank refers to the accounts that other banks have on its books in its home currency.

How a Nostro Account Works

- A nostro account and a vostro account actually refer to the same entity but from a different perspective.
- For example, Bank X has an account with Bank Y in Bank Y's home currency. To Bank X, that is a nostro, meaning "our account on your books," while to Bank Y, it is a vostro, meaning "your account on our books." These accounts are used to facilitate international transaction and to settle transactions that hedge exchange risk.



Pic: Vostro Account

NEED OF NOSTRO AND VOSTRO:

In existing mechanism, when India imports goods and services from any other country (excluding Bhutan/Nepal), in case of imports, India company must pay in dollars, Euro, yen etc. In case of exports, Indian companies get money in dollars, euro etc.

Benefits associated with Nostro and Vostro:

- **Trade with sanctioned countries:** Countries can trade with ease despite sanctions imposed by U.S, U.K or United Nation.
- **Stability in Domestic Currency:** This helps in bringing stability in rupee which in future could also ensure parity with global currencies.
- **Apply break on depreciation:** Since India imports 85% of crude oil of its domestic needs, 55-60% of edible/vegetable oil of its domestic needs, excessive outflow of dollars leads to decline in forex reserves and depreciate the rupee against the dollar.

Q. With reference to the Indian economy, consider the following statements :

1. An increase in Nominal Effective Exchange Rate (NEER) indicates the appreciation of rupee.
2. An increase in the Real Effective Exchange Rate (REER) indicates an improvement in trade competitiveness.
3. An increasing trend in domestic inflation relative to inflation in other countries is likely to cause an increasing divergence between NEER and REER.

Which of the above statements are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Mains Question(2020):

Q. Explain the meaning of investment in an economy in terms of capital formation. Discuss the factors to be considered while designing a concession agreement between a public entity and a private entity.

Rishabh

CARBON BORDER ADJUSTMENT MECHANISM

Relevance for Prelims: Term in News, Carbon Tax

Relevance for Mains: Need of Carbon Border Tax, Implication of CBT

Context: The European Union in COP-27 has proposed Carbon Border Adjustment mechanism- to tax the products such as cement, steel, fertilizers, and aluminum.

About Carbon Border Tax:

- The purpose of the tax is to disincentive companies outside the European Union that are exporting to the European Union four carbon extensive goods: Steel, fertilizers, cement, and aluminum.
- The proposal also requires importers to buy digital certificates representing the tonnage of carbon dioxide emissions embedded in their imported goods.

Need of Imposition of Carbon Tax:

- **Climate Change Mitigation:** European Union has declared to cut its carbon emissions by at least 55% by 2030 compared to 1990 levels. Emissions from imports contributes 20% of the EU's CO₂ total emissions.
- **Carbon Leakage:** Business when find more suitable business alternatives shift their operations which results in carbon leakage and increases the total emissions in the world without paying for the damage.

Issues associated with Carbon Tax:

- **Most Affected Countries:** The BASIC Group (Brazil, South Africa, India and China) has opposed EU's proposal terming it discriminatory and against the principles of equity and Common but differentiated responsibilities and respective capabilities.
- **India's exports:** Exports from India will come down as EU is India's third largest trading partner. Imposition of tax will increase the prices of India-made goods making them less attractive for importers.
- **Violation of Rio Declaration:** Article 12 of the Rio Declaration says that standards applicable to developed countries are not applicable to developing countries. The EU's proposal seems uniform for all the countries.

- **Non-Tariff Barrier:** The policy can be regarded as disguised form of protectionism.

Carbon-Border tax may spur adoption of cleaner technologies but without adequate assistance for newer technologies could rather become disadvantageous for the developing countries.

Prelims(2017):

Q. With reference to 'Global Climate Change Alliance', which of the following statements is/are correct?

1. It is an initiative of the European Union.
2. It provides technical and financial support to targeted developing countries to integrate climate change into their development policies and budgets.
3. It is coordinated by World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD).

Select the correct answer using the code given below:

- (a) 1 and 2 only
- (b) 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Mains(2021):

Q. Explain the purpose of Green Grid Initiative launched at the World Leaders Summit of COP26 UN Climate Change Conference in Glasgow in November 2021. When was the idea first floated in the International Solar Alliance (ISA)?

Rishabh

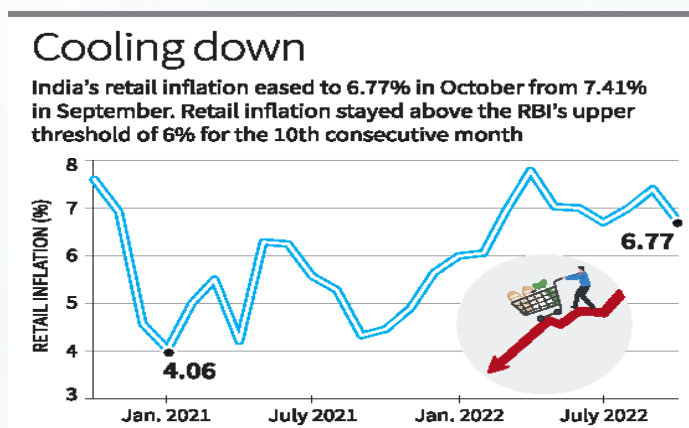
RETAIL INFLATION

Details on “Retail Inflation UPSC”

Relevance for Prelims: Inflation, CPI, WPI

Relevance for Mains: Need for Fixed Inflation Targeting (FIT)

Context: Retail Inflation has come down to 6.77% in October from 7.41% in September



Pic: Retail Inflation

About Retail Inflation:

- **Retail Inflation** is such a ‘witch’, which eats away the pleasure of a person.
- **Retail Inflation** refers to the rise in the price of goods and services of most goods and services of daily common use such as food, clothing, housing etcetera.
- An increase in inflation decreases the purchasing power of a unit of a country's currency. It is measured by the National Statistical Organization which comes under the Ministry of Statistics and Programme Implementation.
- In the context of India, inflation is primarily measured by two indices, e., Consumer Price Index and the Whole Sale Price Index.

About CPI/Retail Inflation:

- **Retail Inflation meaning** calculates the differences in prices of commodities and services such as food and medical care which are generally consumed by Indian consumers.

- It measures inflation to reflect the perspective of a retail buyer.
- The inflation data is used by Monetary Policy Committee to control inflation by using quantitative and qualitative measures such as Changes in Repo Rate, Statutory Liquidity Ratio, and Open Market Operations.

Causes of Inflation In India:

1. **Food Inflation:** Rise in prices of milk, cereals, and fruits due to an increase in input cost has decreased the purchasing power of money.
2. **Black Swan Events:** COVID-19 and the Russia-Ukraine conflict have brought supply disruptions and weakness in Indian currency thus mounting inflationary pressures.
3. **Crude Oil:** Less production due to a shortage of supply owing to the Russia-Ukraine conflict has increased the prices of crude oil (from \$50 to \$120).

Prohibition of unnecessary imports, minimizing dependence on oil, and recovery in demand will foster India's growth. Managing applies of cash in the market and appropriate use of the RBI arsenal is the way forward.

UPSC Previous Year Question Prelims 2020

Consider the following statements:

1. The weightage of food in the Consumer Price Index (CPI) is higher than that in the Wholesale Price Index (WPI).
2. The WPI does not capture changes in the prices of services, which CPI does.
3. The Reserve Bank of India has now adopted WPI as its key measure of inflation and to decide on changing the key policy rates.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 only
- (c) 3 only
- (d) 1, 2 and 3

Rishabh

AIR AND REMUNERATIVE PRICES AND STATE ADVISORY PRICE

State Advisory Price

Details on “**State Advisory Price**”

Relevance for Prelims: CCEA, Sugarcane Pricing

Relevance for Mains: None

Context: Uttar Pradesh, which has the highest **State Advisory Price (SAP)** has recently denied the proposal to increase SAP for sugar cane.



Pic: **State Advisory Price (SAP)**

Pricing of Sugarcane:

- **FRP** is the price declared by the government, which mills are legally bound to pay to farmers for the cane procured from them.
- The payment of FRP is governed by the Sugarcane Control order, 1966 issued under the Essential Commodities Act, 1955 which mandates payment within 2 weeks of the date of delivery of the sugarcane.
- The **FRP** is recommended by the **Commission for Agriculture Costs and Prices (CACP)** and announced by **Cabinet Committee on Economic Affairs (CCEA)**. CCEA is chaired by Prime Minister.
- The FRP is based on the **Rangarajan Committee** on reorganizing the sugarcane industry. It is noteworthy that, unlike others, Sugarcane is the only crop that has legal backing.

About State Advised Price (SAP):

- The **State Advised Price (SAP)** is announced by the Governments of key sugarcane-producing states. **State Advised Price (SAP)** is generally higher than FRP.

About Sugarcane:

- **Top Sugarcane Producing States:** Uttar Pradesh, Maharashtra, Karnataka

- **Rainfall:** Around 75-100 cm.
- **Soil Type:** Deep rich loamy soil.
- **Temperature:** Hot and Humid Climate 21-27 degrees C
- India is the second largest producer of Sugarcane in the world followed by Brazil and Cuba.

Prelims(2018):

Q. Consider the following:

1. Areca nut
2. Barley
3. Coffee
4. Finger millet
5. Groundnut
6. Sesamum
7. Turmeric

The Cabinet Committee on Economic Affairs has announced the Minimum Support Price for which of the above?

- (a) 1, 2, 3 and 7 only
- (b) 2, 4, 5 and 6 only
- (c) 1, 3, 4, 5 and 6 only
- (d) 1, 2, 3, 4, 5, 6 and 7

Mains(2020) :

Q. Suggest measures to improve water storage and irrigation system to make its judicious use under the depleting scenario.

Rishabh

GM EDIBLE OIL

Relevance for Prelims: GM Crops, Effects

Relevance for Mains: Impact of cultivation of GM Crops, Need of GM Crops

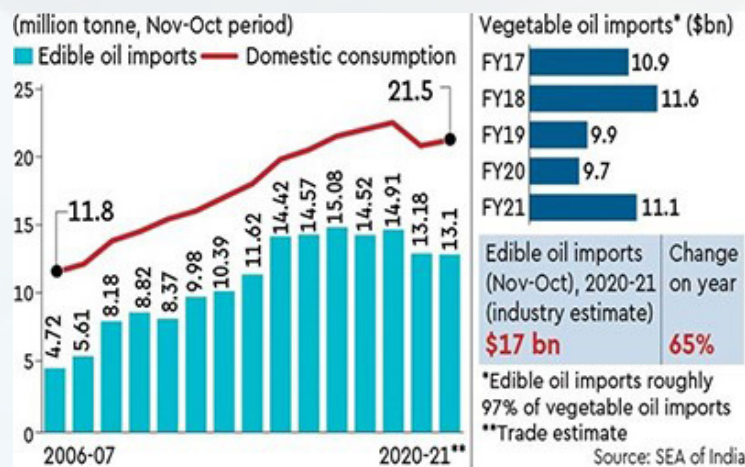
Context: The government in an affidavit informed Supreme Court that country is already importing GM oil, so any fear regarding the cultivation of edible GM Crop.

More in the news:

The Genetic Engineering Appraisal Committee (GEAC) has approved seed production of GM Mustard. (Refer to the previous article if you want to understand about GM Mustard (DMH-11)- <https://plutusias.com/genetic-modified-crops/>)

State of Edible Oil Sector in India:

- India produced more than **35 million tonnes** of edible oil from **9 oilseeds** during 2020-21 as per Ministry of Agriculture.
- India is the **world's largest importer** and **second-largest producer** of edible oils. The consumption of edible oil is more than the production of edible oils, which compels India to rely on imports from Malaysia and Indonesia.
- Currently (October 2022) India **imports 50-60%** of Edible oils of its domestic needs. Out of all edible oils, **Palm Oil** constitutes **62% of total imports** while **Soyabean** constitutes **22%** from Argentina and Brazil and **Sunflower (10%)** from Russia and Ukraine.



Government initiatives about Edible Oils:

- National Mission on Edible Oils-Oil palm:** It is a centrally sponsored scheme implemented by Both Centre and State governments with North-East and Island (Andaman and Nicobar) in focus.

2. The government set up **Technology Mission on Oilseeds** in 1986 which was later converted into **National Mission on Oilseeds and Oil palm (NMOOP) in 2014.**
3. To encourage production of Oilseeds, government has increased the price of MSP of seeds such as Mustard, Rapeseed.

Q1- Consider the following statements:

(UPSC Prelims- 2018)

1. The quantity of imported edible oils is more than the domestic production of edible oils in the last five years.
2. The Government does not impose any customs duty on all the imported edible oils as a special case.

Which of the statements given above is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

Q2- Among the agricultural commodities imported by India, which one of the following accounts for the highest imports in terms of value in the last five years?

(UPSC Prelims Question 2019)

- (a) Spices
- (b) Fresh fruits
- (c) Pulses
- (d) Vegetable oils

Rishabh

GROUNDWATER EXTRACTION IN INDIA

Groundwater extraction

Details on topic on “Groundwater extraction in India”

Relevance for Prelims: Groundwater levels in India, Green Revolution

Relevance for Mains: India as water-stress country, Water scarcity in India

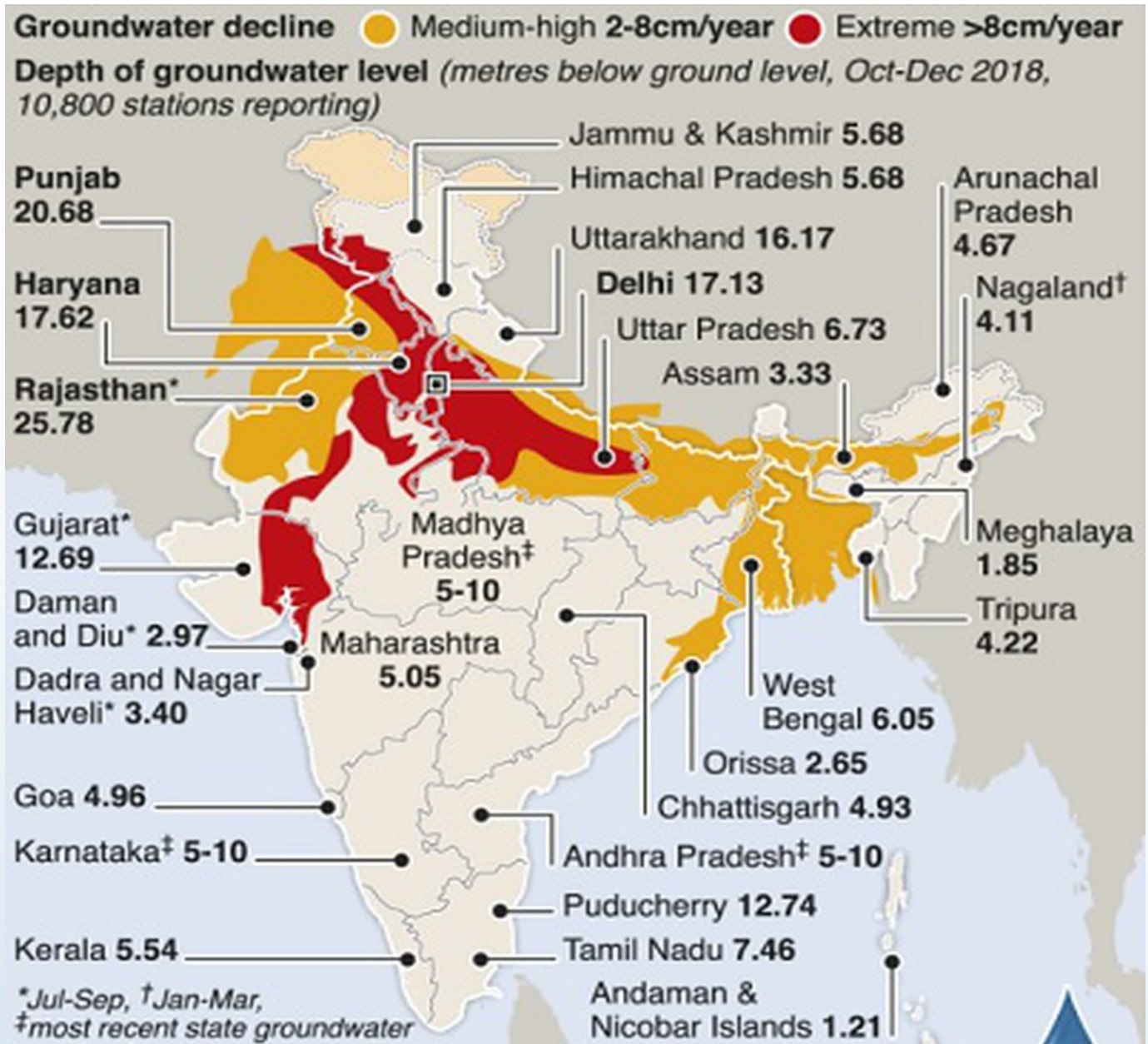
Context: According to an assessment by the **Central Ground Water Board (CGWB)**, Groundwater extraction in India saw an 18-year decline which indicates improvement in Groundwater levels in India.

Status of Groundwater-depletion in India:

- The total annual groundwater recharge for the entire country is **437.6 billion cubic meters (bcm)** and annual groundwater extraction for the entire country is **239.16 bcm**, according to the 2022 assessment report. Further, out of the total **7,089** assessment units in the country, **1,006** units have been categorized as “over-exploited”
- By comparison, an assessment in 2020 found that the annual groundwater recharge was 436 bcm and extraction 245 bcm. In 2017, recharge was 432 bcm and extraction 249 bcm. The 2022 assessment suggests that groundwater extraction is the lowest since 2004 when it was 231 bcm.
- 89% of groundwater depletion in India is attributed to the agriculture sector. 8-9% of Groundwater is utilized by households and is followed by the Industrial sector (2%).
- In 2018, India was declared as the highest groundwater user in the world.
- Around 50% of urban areas’ water requirements and 85% of rural water requirements are fulfilled by groundwater.

Causes of Groundwater depletion in India:

1. **Green revolution:** It enabled water-guzzler crops to be grown in drought-prone/water-deficit regions, leading to the over-extraction of groundwater.
2. **Lax Regulation:** Vacuum in laws and regulations encourages the exhaustion of groundwater in India with impunity.
3. **Industries:** The release of hazardous chemicals, the release of sludge in rivers and lakes, and the dumping of sewage lead to the contamination of groundwater resources.
4. **Over-population:** The increase in population has put pressure on water resources. Thus, leading to higher extraction of groundwater.



About Central groundwater Water-Board:

- It is an office under **the Ministry of Jal Shakti** and is a **National Apex agency** entrusted with the responsibility of providing scientific outputs for the management, expiration, assessment, and augmentation of water resources.
- It is headquartered in **Faridabad, Haryana**.

Initiatives are taken by the government to conserve Groundwater:

- Jal Shakti Abhiyaan** was launched in 2019 in **256 water-stressed districts** to improve water availability including groundwater conditions.
- Aquifer Mapping and Management Program:** It was taken Central Ground Water board to delineate aquifer disposition and their characterization for area-specific groundwater

plans.

3. Atal Bhujal Yojana is a 6000 crore scheme with assistance from the World Bank for the sustainable management of groundwater resources.

4. AMRUT (Atal Mission for Rejuvenation and Urban Transformation) focuses on the development of basic urban infrastructures such as water supply, water sewage, stormwater drainage, green spaces, and non-motorized urban transport.

UPSC Prelims (2020)

Consider the following statements :

1. 36% of India's districts are classified as "overexploited" or "critical" by the Central Ground Water Authority (CGWA).
2. CGWA was formed under the Environment (Protection) Act.
3. India has the largest area under groundwater irrigation in the world.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 and 3 only
- (c) 2 only
- (d) 1 and 3 only

UPSC Main Questions:

Q.1 What are the salient features of the Jal Shakti Abhiyan launched by the Government of India for water conservation and water security? **(2020)**

Q.2 Suggest measures to improve water storage and irrigation system to make its judicious use under the depleting scenario. **(2020)**

Rishabh

TEN YEARS OF CRISPR

Relevance for Prelims: CRISPR Technology

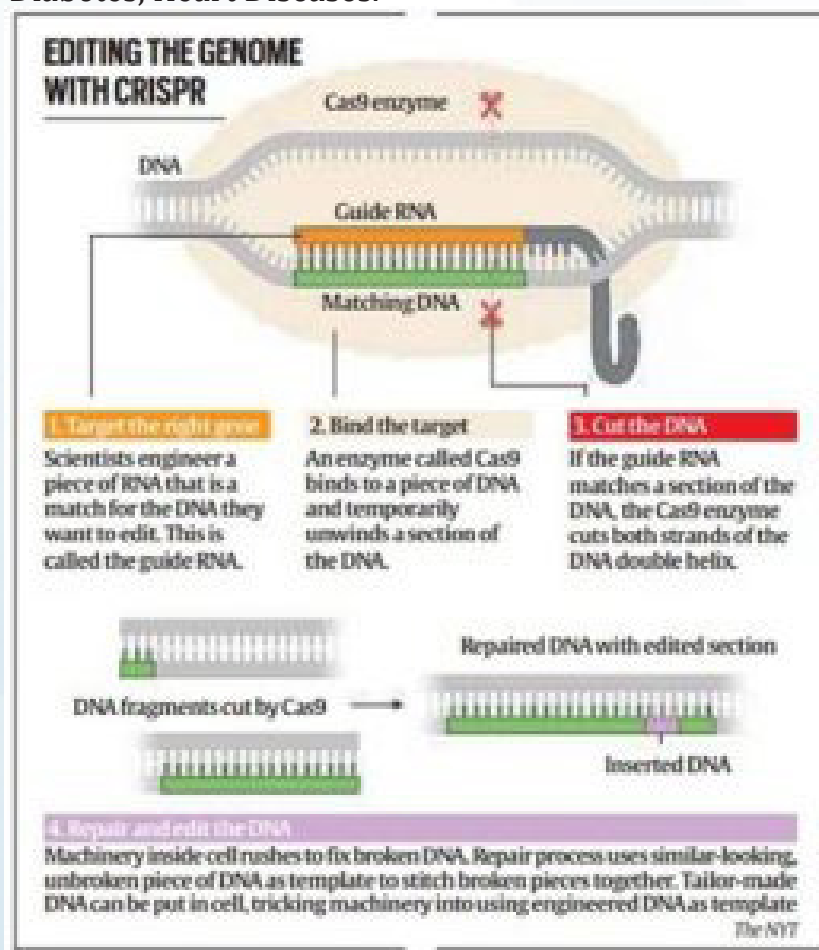
Relevance for Mains: Working and Application of CRISPR Technology

Context: According to a research report, Gene-Editing Technology has nearly unlimited potential and has produced flawless results in clinical trials.

India has recently approved a five-year project to develop CRISPR to cure sickle-cell anemia in Tribal Population.

About CRISPR:

The CRISPR (**Clustered Regularly Inter-Spaced Short Palindrome Repeats**) Technology enables a simple way to edit the genetic codes of living organisms which helps in rectifying genetic errors which in turn can help curing diseases such as Sickle Cell-Anemia, Color Blindness, cancer, Diabetes, Heart Diseases.



It **does not involve** the introduction of new gene from the outside which has been for several decades, particularly in field of agriculture. Example: Genetic Modified Crops such as BT Cotton in India.

Mechanism of CRISPR:

1. The mechanism of CRISPR is often compared to the “**Cut-Copy-Paste**” or “**Find-re-place**” functionalities in computer programmes. A bad stretch in DNA Sequence, which is

cause of disease or disorder, is identified and located, cut and removed and then replaced with “correct or right sequence”.

2. When genes which are causing disorder are located through RNA molecule programming to locate sequence of broken DNA Strand. After it is being identified, special protein called Cas9 (also known as genetic scissors) to break DNA Strand and remove bad sequences.
3. A broken DNA-strand has natural tendency to re-attach and heal itself. If this mechanism continues, bad sequence will continue to grow which will give further damage to body.
4. It replicates a natural defense mechanism in some bacteria and uses a similar method to protect itself from virus attacks.

Concerns Associated:

1. **Germline Modification:** Deliberately changing the genes passed onto children and future generations-creating genetically modified children.
2. **Embryo Alteration:** In 2018, A Chinese researcher used CRISPR to modify a particular gene in the embryo to make babies immune to HIV infection which created global concerns as editing embryos could create designer-babies where new-born babies could have any feature such as-fair skin, blue-green eyes, long or small nose.
3. Developer of CRISPR, Jennifer A. Doudna has warned that the technology could be misused against the humanity, so should be used cautiously.

International Developments:

1. Japan has recently approved commercial cultivation of tomato variety that has been improved using CRISPR based intervention.
2. In India, CSIR has developed CRISPR -based therapeutic solutions for sickle-cell anemia which is scheduled for clinical trials.

The gene-editing tool has brought a new epoch to humanity, but it could turn out to be boon or bane which depends upon the purpose for which it is used. India's issuance of guidelines is the right step in direction where research involving gene-editing will be strictly monitored.

Prelims(2019):

Q. What is Cas9 protein that is often mentioned in news?

- (a) A molecular scissors used in targeted gene editing
- (b) A biosensor used in the accurate detection of pathogens in patients
- (c) A gene that makes plants pest-resistant
- (d) A herbicidal substance synthesized in genetically

Mains(2020):

Q. COVID-19 pandemic has caused unprecedented devastation worldwide. However, technological advancements are being availed readily to win over the crisis. Give an account of how technology was sought to aid the management of the pandemic.

BS VI NORMS; DELHI POLLUTION

BS VI norms; Delhi pollution

Prelims: General issues on Environmental ecology, Bio-diversity and Climate Change

Mains: GS paper III: Conservation, environmental pollution and degradation, environmental impact assessment.

Significance of Prelims: BSES, geographical location of Delhi, emission norms, **AIR QUALITY INDEX (AQI), SAFAR**

Significance of Mains: the difference between **BS-IV and BS-VI, Committee Recommendations:**

Context

- Recently, The Commission of Air Pollution has put a ban on the banning of the use of diesel four-wheelers that are not BS-VI compliant, also the entry of trucks into Delhi.
- Because Delhi's Air Quality Index (AQI) deteriorated to 450, which puts it just below the 'severe plus' category, the Commission for Air Quality Management (CAQM) has invoked measures under Stage 4 of the Graded Response Action Plan (GRAP) with immediate effect.

Bharat stage emission standards(BSES)

- it is introduced in the year 2000,
- they are set under the Ministry of Environment and Climate Change by the Central Pollution Control Board.
- They are based on European (EURO) emission standards.
- BSES are emission standards introduced by the Indian Government to check the output of air pollutants from internal combustion engines and Spark-ignition engine equipment, including motor vehicles.
- These norms were come into effect in 2000 under "India 2000".
- Then it was followed by BS2 in 2001 and BS3 in 2005
- Saumitra Chaudhary committee in 2014, recommended Auto Fuel Vision Policy 2025, which has recommended implementation of BS-IV (2017), BS-V (2019) and BS-VI (2024) standards.
- Government of India in 2016, the Indian government announced that the country would skip the BS-V norms altogether and adopt BS-VI by 2020

Difference between BS-IV and BS-VI

BS-IV	BS-VI
with the roll-out of Bharat Stage VI norms, Diesel Particulate Filter (PDF) and Selective Catalytic Reduction	It will come down to 10 ppm in BS-VI compliant fuels and auto engines.

(SCR) are being introduced	
Real Driving Emission (RDE) was introduced in India, for the 1st time with the implementation of Bharat Stage VI emission norms.	It will measure a vehicle's emission in real-time conditions against laboratory conditions.
sulphur traces in BS-IV fuel (50 ppm).	nitrogen oxide level for BS6-grade diesel engines and petrol engines will be brought down by 70% and 25%, respectively.
	BS VI can bring PM in diesel cars down by 80 %
	The new norms will bring down nitrogen oxides from diesel cars by 70 % and in petrol cars by 25 %

What area unit is BSI, BSII, BSIII, BSIV, and BSVI emission norms?

- These emission standards were set by the governing body Bharat Safety Emission Standard (BSEB)
- To check the output of pollutants from vehicles plying on the road.
- The BS stands for Bharat Stage and is suffixed with the iteration of the particular emission norms.
- These emissions standards of India are based on the lines of European norms commonly known as EURO 2, EURO 3, and so on.
- The 1st regulations with the moniker India 2000 were introduced in 2000, with the 2nd and 3rd iterations introduced in 2001 and 2005 with the moniker BSII (BS2) and BSIII (BS3), respectively.
- The fourth iteration BSIV or BS4 was introduced in 2017 and the delay between the introduction of BS3 and BS4 resulted in fast-tracking the BSVI or BS6 emission instead of BSV or BS5 norms.
- Each of these emission norms has stricter emission standards compared to its predecessors.

Committee Recommendations:

Mashelkar Committee

- In 2002, the central government has accepted the report submitted by the Mashelkar committee in 2022,
- The report proposed a road map for the rollout of Euro-based emission norms in India.
- The committee has also recommended a phased implementation of future norms, with regulations being implemented in major cities first and extended to the rest of

the country after a few years.

- National auto fuel policy was announced by the Commission based on the recommendation of the committee.
- The road map for the implementation of the BS norms was laid out in 2010.
- The policy also created guidelines for auto fuels, reduction of pollution from older vehicles and R&D for air quality data creation and health administration.
- Since October 2010, Bharat Stage (BS) III norms were implemented across the country.
- BS-IV emission norms were put in place in 13 major cities from April 2010, and the entire country from April 2017.
- the Central Government, in 2016 announced that the country would skip the BS-V norms altogether and adopt BS-VI norms by 2020.
- Although, in Delhi, due to the unexpected rise of pollution, it was planned to introduce in 2018 only, which was protested by automobile companies, since they planned their policy according to the 2020 timeline.

Why Delhi is always polluted

- Delhi being landlocked geography is one of the main causes of greater air pollution as compared to other cities.
- The north-westerly winds approach from Rajasthan, and often Pakistan and Afghanistan carry in the dust to the region.
- The Great Himalayas obstruct the escape route of the air with dust particles.
- This is the reason why the causes dust and pollutants settle in the region.
- This can be seen more prominently during the winters because of the high atmospheric pressure created in the region (upward movement of air from the layers below is stopped).

AIR QUALITY INDEX (AQI)

It is an index which reports air quality on daily basis.

- It also measures how the health of a living being affects, within a short time period.
- The objective of this index is to assist people in knowing the quality of the local air and its impacts on their health.
- The **Environmental Protection Agency (EPA)** calculates the AQI for **five major air pollutants**, for which national air quality standards have been established to safeguard public health. They are
 - Ground-level ozone
 - Particle pollution/particulate matter (PM_{2.5}/pm 10)
 - Carbon Monoxide
 - Sulfur dioxide
 - Nitrogen dioxide
- The level of air pollution is greater higher the AQI value will be. Over the last three decades, this concept is widely adopted by many developed countries across the world.
- This index quickly disseminates air quality information in real-time.
- In India, The **National Air Quality Quality (AQI) India** was introduced on 17

September 2014 in New Delhi under the **Swachh Bharat Abhiyan** by the then Environment Minister Shri Prakash Javadekar.

The main purpose

- This Index compares the air quality conditions at different locations/cities.
- It also helps in identifying faulty standards and inadequate monitoring programmes.
- This index helps in inspecting the change in air quality (improvement or degradation).
- This index provides information to the citizens about environmental conditions.
- It is especially useful for people suffering from illnesses aggravated or caused by air pollution.

System of Air Quality and Weather Forecasting And Research (SAFAR)

- It is a national initiative, set up by the Ministry of Earth Sciences (MoES) to check the quality of air in a metropolitan city, by measuring the overall pollution level and the location-specific air quality of the city.
- the Indian Institute of Tropical Meteorology (IITM) Pune, has indigenously introduced this system, and it is operationalized by the India Meteorological Department (IMD).
- It is an integral part of India's first Air Quality Early Warning System operational in Delhi.
- It inspects all weather parameters like temperature, rainfall, humidity, wind speed, wind direction, UV radiation, and solar radiation.

Sources

The Indian Express / Further readings / Westerlies, /Diseases caused by air pollution, and Prevention / Atmospheric layers

Prelims(2017):

Q. Consider the following statements:

1. Climate and Clean Air Coalition (CCAC) to Reduce Short Lived Climate Pollutants is a unique initiative of G20 group of countries.
2. The CCAC focuses on methane, black carbon and hydrofluorocarbons.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Mains(2020):

Q. What are the key features of the National Clean Air Programme (NCAP) initiated by the Government of India?

BMD SUCCESSFULLY TESTED

Prelims: Current events of national and international importance in science and technological development.

Mains: GS paper III: Achievements of Indians in science & technology; indigenization of technology and developing new technology.

Significance of Prelims: **BDM**, geographical location, Prithvi Air Defence (PAD), Advanced Air Defence (AAD) Missile, **AD-1 (Air Defence) missile**

Significance of Mains: the difference between Ballistic Missiles and Cruise Missile, other defence missiles.

Context:

- DRDO has conducted the 1st successful flight test of the Ballistic Missile Defence (BMD) interceptor missile.
- This interceptor missile will have capable of neutralising long-range missiles
- The test was successfully conducted from the APJ Abdul Kalam Island off the Odisha Coast on 2nd Nov 2022.
- The test was a successful maiden flight test of phase-II Ballistic Missile Defence (BMD) interceptor AD-1 missile with a large kill altitude bracket.



Ballistic Missile Defence(BMD) programme.

- It is a type of missile which fires warheads at a target by moving the projectile.
- The objective of India's Ballistic Missile Defense (BMD) programme is to come up with an air-defence shield from all types of hostile missiles, even nuclear ones.
- DRDO is developing a two-tier BMD system to put forward a multi-layered shield against ballistic missile attacks.
- The two-tier system is designed in a way that it can destroy an incoming missile, at a higher altitude, in the exo-atmosphere and if that miscarries, an endo-atmospheric interception will take place.
- These weapons are only guided for short periods as most of the flights are unpowered.
- DRDO started the Ballistic Missile Defence(BMD) program of India around the 2000s

in view of the development of ballistic assets by Pakistan and China.

- The phase-I of the programme have been completed at the end of the 2010s. It consisted of advanced air defence systems and air defence systems based on the Prithvi missile.
- The 2nd phase focuses on the development of anti-ballistic defence systems like the US's Theatre High-Altitude Area Defence system anti-ballistic defence systems which can neutralize intermediate-range ballistic missiles.

Two –tires of Ballistic Missile Defence(BMD) System

Prithvi Air Defence (PAD) missile

- It is based on Prithvi missile.
- It has the capability to intercept and destroy missiles at exo-atmospheric altitudes of 50–180 kilometres.
- Pradyumna ballistic missile interceptor is replaced by the Prithvi air defence

Advanced Air Defence (AAD) Missile

- It is the 2nd tier of Ballistic Missile Defence(BMD).
- It is for Lower altitude interception
- This is structured in a way so that it can knock down hostile missiles the in the endo-atmosphere at altitudes of 15-40 kilometres.
- Aksh Surface to AirMissiles (SAM) is part of the AAD

AD-1 (Air Defence) missile

- It is a long-range interceptor missile designed for both low exo-atmospheric and endo-atmospheric interception of long-range ballistic missiles as well as aircraft.
- These missiles are developed under Phase II of the Ballistic Missile Defense programme

The Purpose:

- The missile is capable of striking down incoming adversary missiles and aircraft.
- It has been developed under the Phase II of the Ballistic Missile Defence programme.

Its features

- It is propelled by a two-stage solid motor and equipped with an indigenously-developed advanced control system, navigation and guidance algorithm to precisely guide the vehicle to the target.

The difference between Ballistic Missiles and Cruise Missile

Ballistic Missiles	Cruise Missiles
after the launch is propelled only for a short duration.	it is a Self-propelled missile till the end of its flight.

it is similar to a rocket engine.	it is similar to a jet engine.
is a Long-range missile that leaves the atmospheric layers of the earth and returns.	it's flight path is within the earth's atmosphere. it never goes out of it
Due to it being unguided for most of its path and its trajectory depending on gravity, air resistance and Coriolis Force, it has Low precision.	it is designed to hit the targets with high precision as it is constantly propelled.
it can have a very long range (300 km to 12,000 km) as there is no fuel requirement after its initial trajectory.	The range is a cruise missile's small (below 500 km) as it needs to be constantly propelled to hit the target with high precision.
it has the capacity to carry heavy payloads and also carry multiple payloads (Multiple Independently targetable Re-entry Vehicles)	it has a limited Payload capacity Usually, it can carry a single payload.
it was developed mainly to carry nuclear warheads.	Developed primarily to carry conventional warheads.
for ex. Prithvi I, Prithvi II, Agni I, Agni II and Dhanush missiles.	for ex. BrahMos missiles

India's other missiles boosting the defence capabilities

- Under the mission Shakti, India also conducted its 1st successful anti -satellites (ASAT) test, in March 2019.
- India is also getting the Russian S-400 triumph Air defence system.
- It is one of the advanced air defence systems
- It can simultaneously track numerous incoming objects and neutralize them
- Recently, the Indian Air force got its 1st deliverable firing unit of a Medium-Range Surface -Air Missile(MRSAM) system
- It provides a point and area of air defence for ground assets from a wide range of threats
- India has come along with an elite group of countries like the US, Russia, China, the UK and France, after the introduction of the Nuclear Missile tracking Ship, the Indian Naval Ship Dhruv

Sources

Britannica

PNB

TheIndianExpress

Further readings

Mission Shakti

About DRDO

Prelims(2017):

Q. What is the purpose of 'evolved Laser Interferometer Space Antenna (eLISA)' project?

- (a) To detect neutrinos
- (b) To detect gravitational waves
- (c) To detect the effectiveness of missile defence system
- (d) To study the effect of solar flares on our communication systems

Mains(2019):

Q. What is the CyberDome Project? Explain how it can be useful in controlling internet crimes in India.

Farhin

CORONAL HOLES

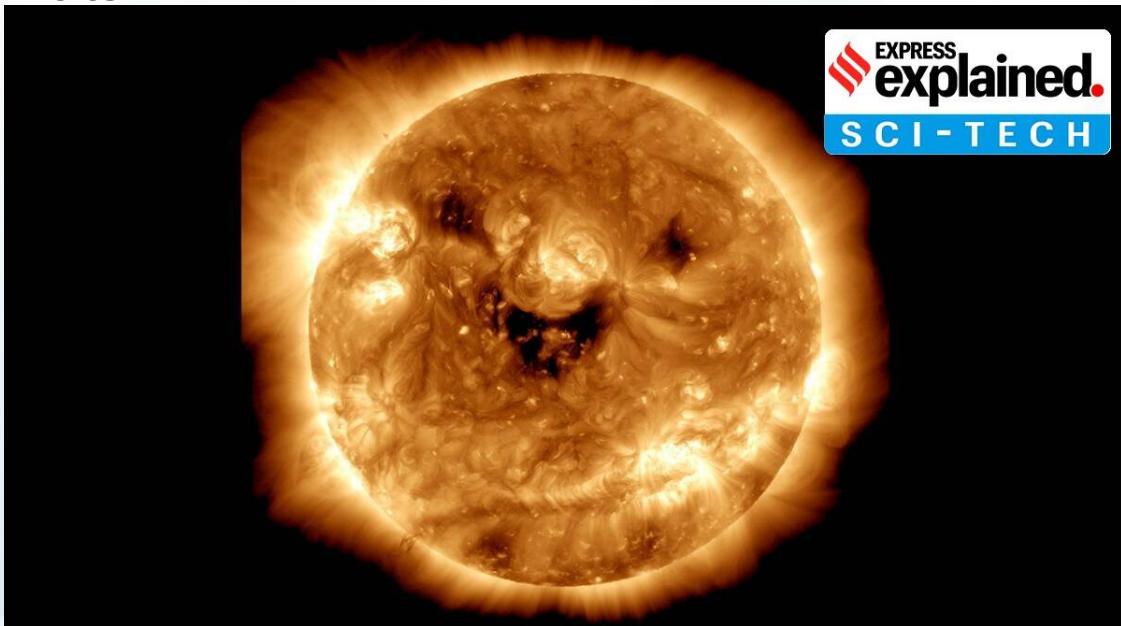
Details on the topic “Coronal Holes”

Relevance for Prelims: Space Technology, Cosmic findings.

Relevance for Mains: Significance of It, Maunder Minimum

Context: Recently, NASA has captured an image that shows dark patches on the surface of the sun resembling a smile and the sun.

**About :
Coronal Holes**



Pic: Coronal Holes

- They gush out solar winds into space.
- They are comparatively colder and appear darker than their surrounding as solar material is less.
- Coronal Holes last between a few weeks to months.
- Solar Minimum, is a period of time when the Sun's activity is substantially diminished.
- Their number waxes and wanes in cycles that last 11 years approximately

Significance :

They help in understanding the environment of space.

Maunder Minimum:

- Contrary to this, sunspot activity may be correlated with the climate on earth. In the

period between 1645 and 1715, sunspot activity had come to a halt on the Sun – a phenomenon referred to as the **Maunder minimum**.

- This coincided with extremely cold weather globally. So, sunspots may have relevance to the climate on earth.
- Such links are tenuous, but solar activity affects space weather, which can have an impact on space-based satellites, GPS, power grids, and so on.

CURRENT AFFAIRS FOR UPSC

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Source: Indian Express

Prelism(2018):

Q. Consider the following statements:

1. Light is affected by gravity.
2. The Universe is constantly expanding.
3. Matter warps its surrounding space-time.

Which of the above is/are the prediction/predictions of Albert Einstein's General Theory of Relativity, often discussed in media?

- (a) 1 and 2 only
- (b) 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Mains(2018):

Q.Discuss the work of 'Bose-Einstein Statistics' done by Prof. Satyendra Nath Bose and show how it revolutionized the field of Physics.

Rishabh

INVASIVE SPECIES

Relevance for Prelims: Agriculture, Environmental Conservation, Tiger Reserves

Relevance for Mains: Conservation of Environment, Afforestation

Context: An invasive species, *Senna spectabilis*, an exotic tree, has taken over between 800 and 1,200 hectares of the buffer zones of the Mudumalai Tiger Reserve (MTR) in the picturesque Nilgiris hill district.

About *Senna Spectabilis*:

- It is an invasive deciduous tree native to tropical areas of America which grows upto 15-20 metres in short period of time.
- The thick foliage of the plant arrests the growth of other indigenous tree and grass species which further creates problem such as food scarcity for wildlife population (Herbivores).
- In IUCN Red List, it is categorised as “**Least Concern**”.



About Mudumalai Tiger Reserve:

- It is located at the tri-junction area of Karnataka, Tamil Nadu and Kerala.
- It shares boundary with Wayanad Wildlife Sanctuary on the west, Bandipur Tiger Reserve on the North forming a large conservation landscape.
- **Mudumalai** Tiger Reserve is one among the 14 tiger reserves that was CA|TS status for efficient management of tigers. CA|TS is a set of criteria which allows tiger sites to check whether their management practices lead to tiger conservation.

14 Tiger Reserves which have been accredited are:

- Valmiki Tiger Reserve in Bihar,
- Parambikulam Tiger Reserve in Kerala,
- Manas, Kaziranga and Orang Tiger Reserve in Assam,
- Dudhwa Tiger Reserve in Uttar Pradesh,
- Sunderbans Tiger Reserve in West Bengal,
- Pench Tiger Reserve in Maharashtra,
- Satpura, Kanha and Panna Tiger Reserve in Madhya Pradesh,
- Bandipur Tiger Reserve of Karnataka,
- Mudumalai and Anamalai Tiger Reserve in Tamil Nadu.

Prelims(2022):

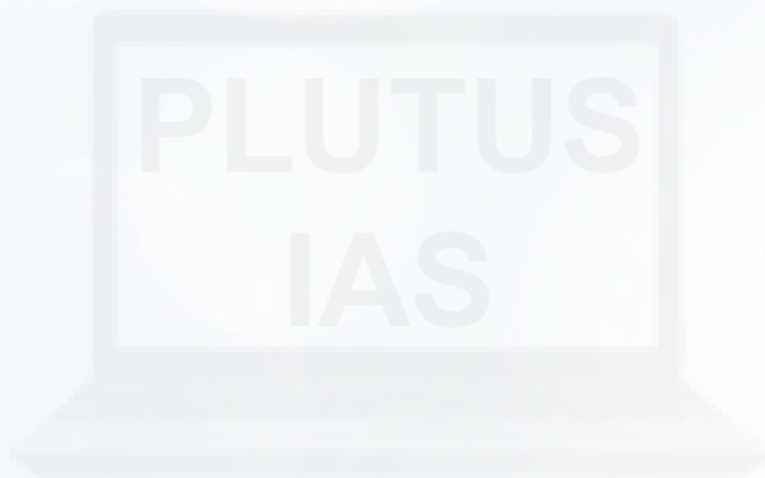
Q. Certain species of which one of the following organisms are well known as cultivators of fungi?

- (a) Ant
- (b) Cockroach
- (c) Crab
- (d) Spider

Mains(2017):

Q. 'Climate Change' is a global problem. How will India be affected by climate change? How Himalayan and coastal states of India will be affected by climate change?

Rishabh



DOLPHINS IN GANGA

Prelims: Environment and Conservations efforts

Context: Recently, it has been observed that with improvement in quality of water, Dolphins which are considered as indicator species have returned to river.

About Ganges River Dolphin:

- Ganges River Dolphin (*Platanista Gangetica*) are found in river systems of Ganga, Brahmaputra, Meghna, and Karnaphulli-Sangu in Nepal, India and Bangladesh. It was officially discovered in 1801.
- The government has declared Ganges River Dolphin as National aquatic animal of India in 2009.
- They are indicator-species which means if a stretch of river is polluted, the dolphin is likely to shift to another stretch indicating pollution in water.
- They are also called *Susu* owing to voice they create.
- Since they are blind, they use the method of “Echolocation” to catch their prey.
- Their lifespan varies from 20-26 years.

Threats to Gangetic Dolphin:

1. Toxicity of rivers
2. Dredging in river for creating transport channels.
3. Killing for their flesh, oil derived from their bodies.
4. Fishnets

Initiative taken to conserve:

1. **Project Dolphin:** This initiative was introduced during the first meeting of National Ganga Council in 2019 under **Arth Ganga**. It is brought on the lines of Project Tiger, which increased the population of tiger in India.
2. It is listed as “**Endangered**” in IUCN red list since 1996.
3. The government in order to create awareness among people celebrates 5th October as National Ganga Dolphin Day.
4. The government has established state-of art Vikramshila Ganges Dolphin Sanctuary.

Prelims(2019):

Q. Consider the following pairs: Wildlife Naturally found in

1. Blue-finned Mahseer : Cauvery River
2. Irrawaddy Dolphin : Chambal River
3. Rusty-spotted Cat : Eastern Ghats

Which of the pairs given above are correctly matched?

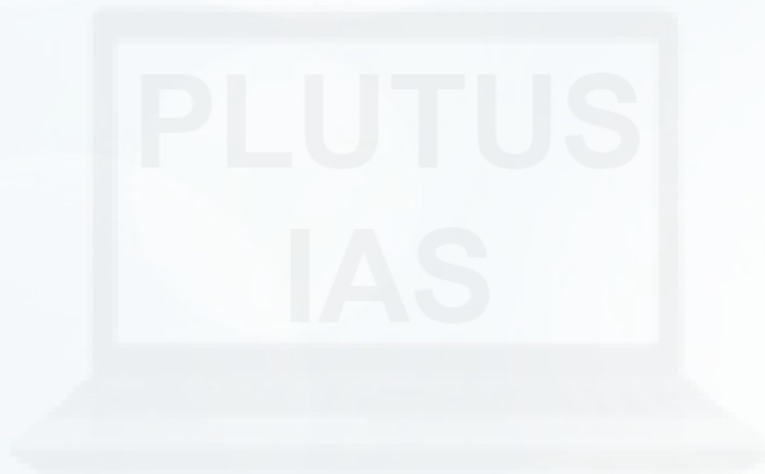
(a) 1 and 2 only

- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Mains(2019):

Q. Define the concept of carrying capacity of an ecosystem as relevant to an environment. Explain how understanding this concept is vital while planning for the sustainable development of a region.

Rishabh



BLUE FLAG CERTIFICATION

Context: Recently, the globally recognized and coveted eco-label “blue ag” has been accorded to two Indian beaches- Minicoy Thundi and Kadmat-both in Lakshadweep. The total number of beaches which has been given Blue Flag Certification stands at 12.

About Blue Flag Certification for Beaches:

It is a globally recognized eco-label that is accorded to a beach on fulfillment of 33 criteria. These criteria are further divided under 4 headings, namely:

- Bathing water quality
- Environment education and information
- Environmental Management
- Conservation and safety services in the beaches

The Blue Flag is being given by jury members composed of Foundation for Environmental Education (FEE), International Union for Conservation of Nature (IUCN), United Nation Environment Program (UNEP), United Nations World Tourism Organization (UNWTO).

They are characterized as cleanest beaches on world. The Blue Flag tag also boost promotes tourism which promote sustainable development of the area.

About Blue Flag Certified beaches:

The Thundi Beach is one of the most pristine and picturesque beaches in the Lakshadweep archipelago where white sand is lined by the turquoise-blue water of the lagoon. It is a paradise for swimmers and tourists a like.

blue flag certified beach



Pic : The Thundi Beach

The Kadmat Beach is especially popular with cruise tourists who visit the island for water sports. It is a paradise for nature lovers with its pearl white sand, blue lagoon waters, its moderate climate and friendly locals.

Blue Flag Certification



Pic : The Kadmat Beach

The other Indian beaches in the blue list are Shivrajpur-Gujarat, Ghoghla-Diu, Kasarkod and Padubidri-Karnataka, Kappad-Kerala, Rushikonda- Andhra Pradesh, Golden-Odis-ha, Radhanagar- Andaman and Nicobar, Kovalam in Tamil Nadu and Eden in Puducherry beaches.

In order to qualify for this prestigious award, a series of stringent environmental, educational, safety-related and access-related criteria must be met and maintained. The mission of Blue Flag is to promote sustainability in the tourism sector, through environmental education, environmental protection, and other sustainable development practices. (ANI)

Reference:

The Economic Times

Prelims(2019):

Q. Consider the following statements:

1. The Standard Mark of Bureau of Indian Standards (BIS) is mandatory for automotive tyres and tubes.
2. AGMARK is a quality Certification Mark issues by the Food and Agriculture Organisation (FAO).

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Mains(2021):

Q. Describe the major outcomes of the 26th session of the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC). What are the commitments made by India in this conference?

Rishabh

GENETIC MODIFIED CROPS

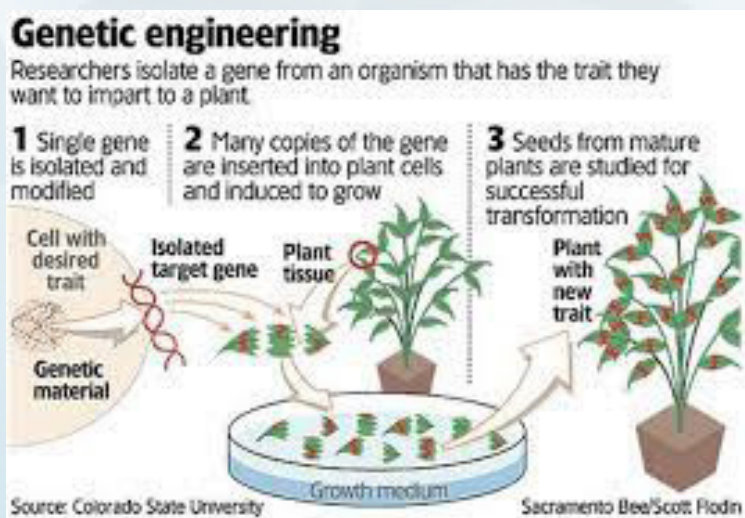
Context: The Genetic Engineering Appraisal Committee has given a green signal for commercial cultivation of Genetically Modified (GM) Mustard also known as DMH-11 (Dhara Mustard).

About Genetic Modified Crops:

- They are crops whose DNA is modified artificially by inserting genetic material from other living organisms to amplify its structural existence, adaptability, growth yield, tolerance to pesticides and herbicides or ultimately improve nutritional content.
- Currently, there is no edible (eatable/consumable) GM crop that is commercially cultivated in India. **Only one** GM crop is approved by regulatory authorities, Bt Cotton (Bt stands for *Bacillus thuringiensis*). However, there are many crops which are being approved for pilot field trials but not allowed for commercial cultivation.

Status of Genetic Modified Crops in India:

- In 2002, GEAC (Genetic Engineering Appraisal Committee) allowed for commercial cultivation of bt cotton. This was the first attempt by government to introduce GM crops in the Indian market.
- Genetic Engineered food crops in India are regulated by a statutory body (GEAC) which functions under the Environment Protection Act, 1986. It functions under the Ministry of Environment, Forest and Climate Change.
- GEAC is responsible for granting permits to conduct experiments and large scale open field trials and grant approval for commercial release of biotech crops.



About DMH-11 (Dhara-Mustard-Hybrid):

- Mustard-a self-pollinating plant is quite difficult to hybridize as it contains both male and female reproductive organs (*Pistil and stamen*).
- By using the *Barnese* method, Mustard will be better suited to hybridization.

- The DMH-11 contains 3 genes which are *Barnese*, *Bastar* and *Barnese* which are obtained from soil bacterium.

Need of DMH-11

India spends more than 60,000 core in importing edible oils from Malaysia and Indone-sia which results in excessive flow of dollars. DMH-11 will increase the yield of Mustard which will reduce the need to import edible oils.

Concerns associated with DMH-11:

Detrimental to health: Due to the presence of Bar gene, which makes DMH-11, a herbicide-tolerant plant, which could prove fatal for the health of individuals.

Affects Biodiversity: The spray of herbicides does not affect the well-being of plants but affects the surrounding environment and biodiversity.

Water-Guzzler: DMH-11 requires a huge amount of water and fertilizers which is not environmentally sustainable.

Potential Negative effects: Due to lack of scientific studies, the negative health effects could not be discounted.

Given the increased pace of climate change, frequency of natural disasters, declining groundwater table, GM crops are sustainable and potent weapon to address hunger and malnutrition issues.

UPSC Previous Year Question : (2018)

Q1- With reference to the Genetically Modified mustard (GM mustard) developed in India, consider the following statements :

1. GM mustard has the genes of a soil bacterium that give the plant the property of pest-resistance to a wide variety of pests.
2. GM mustard has the genes that allow the plant cross-pollination and hybridization.
3. GM mustard has been developed jointly by the IARI and Punjab Agricultural University.

Which of the statements given above is/are correct ?

- A. 1 and 3 only
- B. **2 only**
- C. 2 and 3 only
- D. 1, 2 and 3

Rishabh

LVM3-M2/ONE WEB INDIA-1, INDIA'S HEAVIEST SPACE VEHICLE

LVM3-M2/One Web India-1

Prelims: National current affairs

Mains: GS III: Science and technology development; indigenization of technology and developing new technology.

Why in the news

- ISRO has successfully launched the **LVM3 M2/OneWeb India-1** mission.
- This rocket carried almost 6 tonnes of payload into the lower earth orbit, the heaviest ISRO mission till now.

LVM3-M2/One Web India-1

- This mission is a dedicated commercial satellite mission of New Space India Ltd (NSIL).
- This mission is a Central Public Sector Enterprise (CPSE) under the Department of Space, Government of India.
- OneWeb is a joint venture between the UK government and India's Bharti Global.
- Lift vehicle-GSLV MkIII was renamed for this mission as Launch Vehicle Mark-3 (LVM3-M2).
- It is a three-stage rocket with the
1st stage fired by solid fuel,
Followed by 2nd stage of liquid fuel
The 3rd stage is the cryogenic engine.
- **LVM3-M2 OneWeb India-1 Mission** of 36 satellites belonging to Network Access Associated Ltd (OneWeb).
- The mission includes the separation of all 36 satellites into 601 km orbit with a minimum 137 m distance between any payload satellites.
- It is the 1st Indian rocket with a six-ton payload.
- It is the 1st launch of LVM3 to LEO.



Advantages:

- This mission will make the company cable start offering satellite broadband services across the country by 2023.
- This mission will provide high-speed internet services in remote areas also, where terrestrial networks are difficult to set up, including the middle of the ocean, the Himalayas (even on top of Mount Everest)

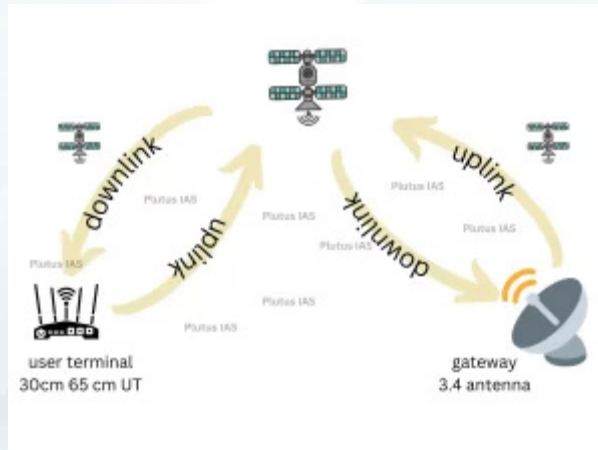
Technological achievement

- It will be capable of handling multiple satellite separation events.

- It will increase the nominal mission duration.
- It will also ensure a safe separation distance through C25 (Cyro) stage re-orientation and will increase the velocity.
- It will also check the data availability data duration of the entire mission.
- Recognition of new payload adaptor and interface ring for the satellites dispenser

OneWeb Constellation

- It operates in LEO Polar Orbit Satellites; these satellites are arranged in 12 rings (Orbital planes) with 49 satellites in each plane.
- The one web constellation orbital planes are inclined to be near polar (87.9 Deg.)
- These orbital planes will be 1200 km above the Earth.
- Each and every satellite completes a full trip around the earth every 109 minutes.



About NewSpace India Ltd (NSIL):

- It is Headquartered in Bengaluru
- It is a Central Public Sector Enterprise of the Indian government.
- Under the administrative control of the Department of Space, it was set up in 2019.
- This is considered the commercial arm of the Indian Space Research Organization (ISRO) with the chief responsibility to empower Indian industries to take up high-technology space-related activities.
- The objectives
 - Owning satellites for Earth Observation and Communication applications and providing space-based services
 - Contractions of satellites and launching them as per customer.

- Accommodating the Launch Services for satellites belonging to the customer.
- Constructing the launch vehicles through Indian Industry and launching as per the requirement of the satellite customer
- It will provide space-related Services which are related to Earth Observation and Communication satellites on a commercial basis.
- It will construct the satellite through Indian Industry
- Technology will transfer to Indian Industry

Other Launch Vehicles Developed by ISRO

Satellite Launch Vehicle (SLV):

- The 1st rocket was developed by ISRO.
- It was simply named an SLV, or Satellite Launch Vehicle.

Augmented Satellite Launch Vehicle (ASLV):

- ASLV and SLV both can carry small satellites, measuring weight up to 150 kg, to lower earth orbits.
- Till the 1900s ASLV operated before PSLV came into operation.

Polar Satellite Launch Vehicle (PSLV):

- It was 1st launched in 1994, and since then it is ISRO's main rocket.
- At present PSLV, it is improved in many ways and is many times more powerful than the ones used in the 1990s.
- It is the 1st Indian launch vehicle to be equipped with liquid stages.
- It is considered the most reliable rocket used by ISRO till now, with 52 of its 54 flights being successful.
- It successfully launched two spacecraft – Chandrayaan-1 in 2008 and Mars Orbiter Spacecraft in 2013 – that later travelled to Moon and Mars respectively.

Geosynchronous Satellite Launch Vehicle (GSLV):

- This rocket of ISRO is substantially more powerful, it is designed to carry heavier satellites much deeper into space. Till today, GSLV rockets have carried out 18 missions, of which only 4 were failures.
- It is considered taking 10,000 kg of satellites to lower the earth's orbits.
- India's own developed Cryogenic Upper Stage (CUS), forms the 3rd stage of GSLV Mk

II.

- Mk-III versions empowered ISRO to launch its satellites self-sufficiently.
- Prior to this, India used to depend on the European Arienne launch vehicle, to carry its heavier satellites into space.
- Chandrayaan -2 mission to the moon in 2019 was carried out in the GSLV Mark-III, it was the 1st operational flight of the rocket
- ISRO changed the name of GSLV Mark-III to Launch Vehicle Mark-III.
- A GSLV for the Geostationary Orbit (GEO) will continue to be called so.
- The LVM3 will go everywhere such as GEO, Medium Earth orbit (MEO), LEO, and missions to the moon, and sun.

Prelims(2018):

Q. With reference to the Indian Regional Navigation Satellite System (IRNSS), consider the following statements:

1. IRNSS has three satellites in geostationary and four satellites in geosynchronous orbits.
2. IRNSS covers entire India and about 5500 sq. km beyond its borders.
3. India will have its own satellite navigation system with full global coverage by the middle of 2019.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) None

Mains(2017):

Q. India has achieved remarkable successes in unmanned space missions including the Chandrayaan and Mars Orbiter Mission, but has not ventured into manned space missions, both in terms of technology and logistics? Explain critically

Farhin

OFFSHORE WIND ENERGY

Context: Ministry of **New and Renewable Energy** is exploring options for leasing blocks for generating power through offshore wind energy projects.

About Wind Energy:

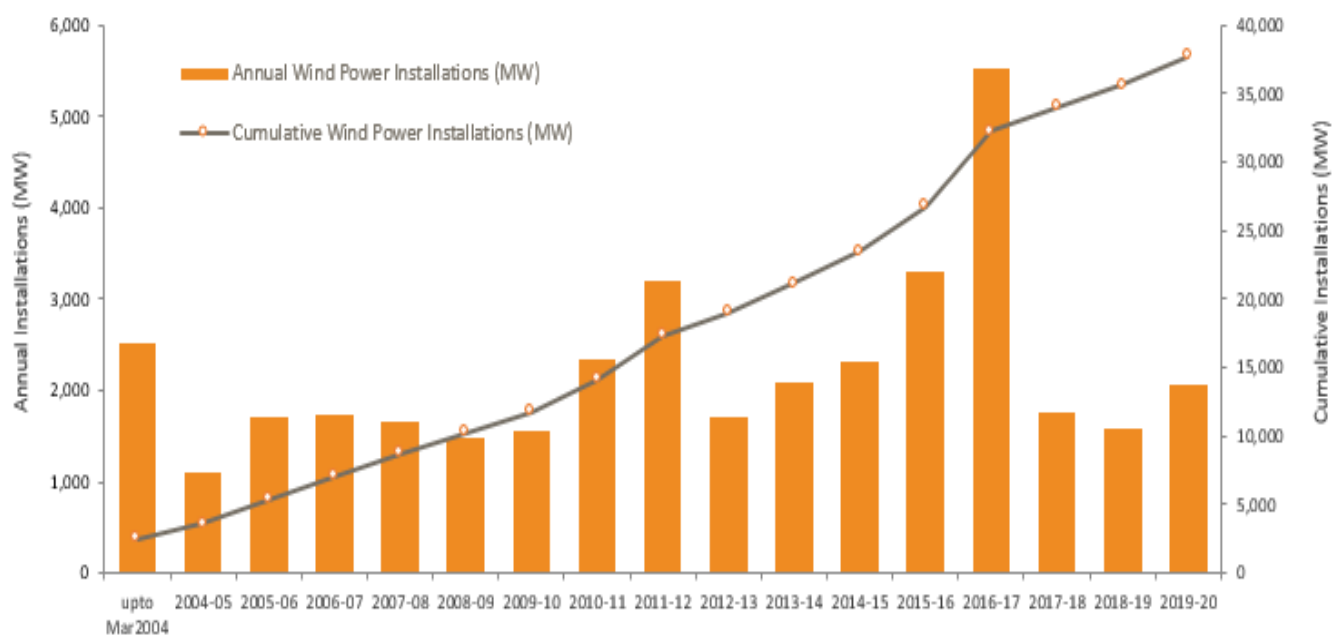
It can be divided into two different categories namely, **onshore wind farms** (Wind turbines located on land) and **offshore wind farms** (wind turbines installed on water bodies).

India's progress of Wind Energy in India:

Currently, Total installed wind power capacity stands at **41.666 GW**, which is fourth largest wind power capacity in the world. Majority of the commercially exploitable resources are located in seven states: Rajasthan, Tamil Nadu, Gujarat, Maharashtra, Andhra Pradesh, Madhya Pradesh.

According to the **Global Wind Energy Council**, India has potential to generate more than **60GW** from wind.

India: Wind Power Installations (MW)



Source: MNRE

Mercom India Research

Associated benefits of Off-shore wind energy:

- 1. Consistent generation:** Since wind speed over water bodies is consistent unlike land. Offshore wind farms generate more electricity.
- 2. High capacity utilization factor:** Offshore wind farms have higher capacity utilization factor as compared to onshore wind farms which in turn, allows offshore

wind farms to operate for long hours.

- 3. Hassle-free power generation:** Owing to isolated locations, there are no physical restrictions such as hills or buildings that could block the flow.
- 4. Increased energy harvest:** Since they are located far at sea, they are not intrusive in nature (encroachment of land) allowing for larger farms to be created per square mile.

Challenges associated with Offshore wind farms:

- 1. Costly installation cost:** Hard to reach location, stronger-foundation results in high installation cost.
- 2. Impact on marine life:** According to various reports, the marine life near offshore wind farms decreases due to interference with their habitat.
- 3. Maintenance cost:** Speedy high winds during storms damages wind turbines which incurs high repairing costs implying taking care of white elephants.

Government initiative regarding wind energy:

- 1. National offshore wind energy policy:** The policy was notified in 2015 with an objective to develop offshore energy in Exclusive Economic Zone along the Indian coastline of 7600km.
- 2. National Wind-Solar Hybrid policy:** The policy aims to provide a framework for promotion of a large grid connected to wind-solar hybrid systems for effective and efficient utilization of solar and land resources.

India stands a great chance to leap forward in net-zero way before the set date.

The government needs to create a climate of comfort by introducing dynamic yet effective policies addressing challenges faced by industry such as high taxes, lack of sub-sea stations, inadequate infrastructure to reap the benefits of available resources such as long coastline and daylight of 12 hours in states such as Rajasthan and few pockets of Gujarat and Uttar Pradesh.

Prelims(2019):

Consider the following statements :

- "The Climate Group" is an international non-profit organization that drives climate action by building large networks and runs them.
- The International Energy Agency in partnership with the Climate Group launched a global initiative "EP100".
- EP100 brings together leading companies committed to driving innovation in ener-

gy efficiency and increasing competitiveness while delivering on emission reduction goals.

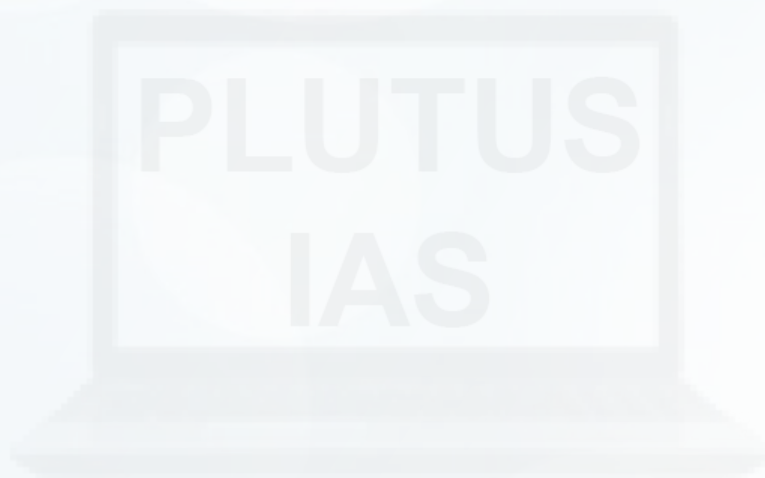
4. Some Indian companies are members of EP100.
5. The International Energy Agency is the Secretariat to the "Under2 Coalition".

Which of the statements given above are correct?

- (a) 1, 2, 4 and 5
- (b) 1, 3 and 4 only
- (c) 2, 3 and 5 only
- (d) 1, 2, 3, 4 and 5

Mains Questions(2018):

Q. Access to affordable, reliable, sustainable and modern energy is the sine qua non to achieve Sustainable Development Goals (SDGs). Comment on the progress made in India in this regard.



Rishabh



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Courses at Plutus IAS are designed to cater the needs of civil services aspirants so that they can tackle each and every challenge thrown by the civil services exam with confidence and clarity. Vision of Plutus IAS is to make aspirants capable of radiating knowledge.

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Though it is very important to know about the major news and important events happening around the world but also more important is to be able to critically analyze the news, examine the facts and judge it from different points of view and form an independent opinion, while preparing for Civil Services.

Understanding the importance of Current Affairs, Plutus IAS has come up with a monthly Current Affairs magazine with comprehensive coverage of all important news and events of the month precisely that will make the preparation of IAs more streamline.



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