

ENVIRONMENT

❖ **What did India's first national water-body census find?**

➤ **CONTEXT:** India is facing a water crisis with groundwater decline and biodiversity loss, and climate change increasing the frequency of floods and droughts. In this context, water bodies are important. They buffer against climate variability, holding flood waters for use in dry periods. They contribute to food and water security and livelihoods by recharging groundwater and providing water for irrigation and livestock. They also have cultural and ecological significance.

- But water bodies are increasingly under threat from pollution, encroachment, urbanisation, and drying.
- If they are to be conserved and managed effectively, we need action plans and these require baseline data. Because water bodies are managed by different agencies from state to local to private entities, the data must be uniform and easily accessible. To actually manage water bodies, we need contextual and traditional knowledge of communities to be integrated with formal data.
- Data on reservoirs and rivers has been available on the India Water Resources Information System (WRIS) for the last few years, but thus far there has been no data on smaller water bodies that are the lifeline of rural India and critical cultural, flood-control and recreational spaces in cities.

➤ **How was the census conducted?**

- The massive effort expended in the first-ever water body census, conducted by the Ministry of Jal Shakti and whose findings were published recently, was much needed.
- The census's objective was to develop a national database with information on the size, purpose, ownership, status, and conditions of water bodies. It covered all natural and human-made units bounded on all sides for storing water, irrespective of condition or use.
- The software for data entry and the mobile app for capturing the location and the visual of the water bodies were developed and data-processing workshops were conducted to train the trainers in all States and Union territories.
- The census built on existing and publicly available satellite-derived datasets. This dataset was also extremely rich, allowing citizens to hone in on a specific village and download the historical time series data on each water body. But it only includes attributes that can be observed from space. The water body census extends this to social characteristics including ownership, use and condition.

➤ **What does the data show?**

One value of such a large national effort is that it allows us to compare spatial and temporal trends across the country.

- **Most water bodies in the country are very small** – The vast majority of India's water bodies are less than one hectare (ha) large. This means locating and keeping track of them is likely to remain a challenge. The traditional way to map these water bodies, using satellites, may not work, which is why the mammoth effort expended in ground-based tracking is very welcome.
- **The water bodies show regional patterns that correlate with rainfall** – In general, in drier states like Gujarat, Maharashtra, and Rajasthan, water bodies tend to be larger and publicly held. In the wetter parts of the country, like Kerala, West Bengal, and states in the northeast, more than three-quarters of the water bodies are privately owned. In drier states, the water bodies are primarily used for irrigation and groundwater recharge. In wetter states, domestic use and pisciculture dominate. Mid-sized water bodies are largely panchayat-owned.
- **Most water bodies have never been repaired or rejuvenated** – Several water bodies were classified "not in use", meaning despite the recent interest in rejuvenating water bodies, most of them have never been repaired or revived.

➤ **How can the census improve?**

- **First**, there are some clear gaps. Water bodies have an important role in supporting biodiversity. They harbour fish that birds feed on and provide roosting and breeding spaces for resident and migratory birds. These ecological functions are related to the size and location of the water bodies. But the water body census does not address questions about this.
 - ✓ The report itself noted in its preamble that water bodies "support healthy ecosystems", yet the focus was exclusively on human use, which means only pisciculture or fish farming, which is seeded and does not reflect natural biodiversity, is featured.
 - ✓ In classifying water bodies in terms of reasons of abandonment or disuse, "others" emerged as a significant reason, on par with "drying up" in a few states, but far ahead of other specific categories such as industrial pollution, construction, and salinity. One possibility is that the census questionnaire may have left out the most common reasons like eutrophication, sewage pollution, and solid waste dumping.
- **Second**, there are inconsistencies. The census groups water bodies into five types: ponds, tanks, lakes, reservoirs, and water conservation schemes. Its glossary defines a pond as a smaller water body than a tank, while "water conservation structures" might include check dams and percolation tanks. However,

these categories are not mutually exclusive: many tanks that were traditionally used directly for irrigation primarily serve as recharge structures today.

- ✓ Based on the data, it appears that in Karnataka, these were classified as ponds and tanks serving the purpose of irrigation, whereas in Maharashtra these were classified as water conservation structures, primarily serving the purpose of groundwater recharge. The sources of irrigation statistics for the two states suggest neither state has much tank irrigation.
- **Third**, the data are not standardised across states. Some states like Gujarat don't show any water bodies not being in use, whereas Karnataka reports almost 80% of its water bodies as being in a state of disuse. This suggests differences in interpretation by the enumerators.
- There are some other concerns. For example, the map for north Karnataka seems suspiciously empty. Since the original geotagged data does not seem to have been made available yet, it is unclear if some districts were skipped or if they genuinely had a lower water-body density.
- Notwithstanding these shortcomings, it is crucial that the government continue such nationwide censuses of a vital resource, with modifications. This first edition itself provides high-level indications on the ways forward by detailing ownership, state of use, and the costs of construction and repair. It points to how and why water bodies must be restored, which agency's capacities need to be strengthened, where and how much funds are needed, and who will benefit from such efforts.
- If such censuses are conducted every five or 10 years, over time, they represent the pulse on the state of water in the country as a whole and trends over time.

DEFENCE

❖ **The vintage MiG-21 and why the Indian Air Force continues to fly them**

➤ **CONTEXT: A MiG-21 fighter jet of the Indian Air Force (IAF) crashed recently near Rajasthan's Suratgarh while it was on a routine operational training sortie.**

➤ **What is the MiG-21 aircraft?**

- The MiG-21s are among the six fighter jets presently flown by the Indian Air Force (IAF) and for a long period of time has been the backbone of the IAF.
- The MiG-21s are single engine, single-seater multi-role fighter/ground attack aircraft. While they were first inducted in 1963 as an interceptor aircraft, over the next few decades they were upgraded to perform a variety of roles performed by a fighter aircraft, including ground attack.
- India has procured over 700 MiG-21 aircraft of different variants since then, such as the Type-77, Type-96 and the BIS. The latest of them are the MiG-21 Bison, which is an upgraded aircraft with advanced missiles and radars and better avionics. Over a 100 MiG-21s with the IAF have been upgraded to Bison since 2006.
- The aircraft in the past had proved their mettle in several wars fought by India.
- For instance, in the Bangladesh Liberation War of 1971, the MiG-21s (Type 77 variant) had played a major role in swaying the war's result in India's favour.
- The combat jet was also among the mainstay of the IAF in the 1965 war and the 1999 Kargil conflict with Pakistan.
- In 2019, Group Captain Abhinandan Varthaman (then a Wing Commander) of the erstwhile Srinagar-based No 51 squadron was flying a MiG-21 Bison when he downed a F-16 aircraft of the Pakistan Air Force.

➤ **Past MiG accidents and causes**

- As per government data, close to 500 MiG-21s have crashed in the last 60 years, killing over 170 pilots. More than 20 aircraft have crashed since 2010. In fact, in the very first year of its induction in 1963, two of the Soviet-era aircraft had crashed.
- In July 2022, a trainer version of the fighter aircraft crashed killing two pilots on board and in 2021, there were five MiG-21 Bison crashes that killed three pilots.
 - ✓ The reasons for the crashes have been several — ranging from technical defects, human error, bird hits or spatial disorientation of pilots in certain circumstances.

➤ **When are the aircraft getting phased out?**

- There are three squadrons of MiG-21 Bison aircraft currently in service in the IAF. Each squadron comprises 16-18 aircraft, aside from one or two trainer versions.
- In September 2022, the decorated No 51 squadron was number plated. The three MiG-21 Bison squadrons are planned to be phased out by December 2025.

➤ **Why does the IAF continue flying the MiG aircraft?**

- The IAF has a sanctioned squadron strength of 42, even as its current squadron strength is around 30.
- Phasing out the fighter jets earlier would bring down the IAF's fighter squadron strength at dangerously low levels, especially till they are replaced by the indigenous Light Combat Aircraft Tejas squadrons.
- According to official the IAF can at the most reach 35 squadrons by next decade even after considering new fighter acquisitions and the planned phasing out of existing squadrons of ageing fighter jets.
- Senior IAF officers, particularly those who have flown the aircraft, have often said the aircraft did not have an abysmal safety record when compared to the number of flying hours and the years in service and have on

various occasions highlighted the rigorous maintenance and checks that every fighter aircraft undertakes before going on a sortie.

PRELIMS

1. **Commission For Scientific and Technical Terminology (CSTT)**

News: The Commission for Scientific and Technical Terminology (CSTT) is creating a technical and scientific terminology in 10 Indian languages underrepresented in the learning landscape.

About

- ✓ These 10 languages are Bodo, Santhali, Dogri, Kashmiri, Konkani, Nepali, Manipuri, Sindhi, Maithili, and Sanskrit.
- ✓ These are a part of the list of 22 official languages of India's Eighth Schedule, however, there is a paucity of study material created in them, primarily because of a lack of words to describe scientific phenomena and technical terms. In this background, the CSTT will bring out fundamental (basic) dictionaries with 5,000 words per language.
- ✓ Significance: The move assumes importance as the National Education Policy 2020 has espoused the use of regional languages as a medium of education in both school and college.

Commission for Scientific and Technical Terminology (CSTT)

- ✓ Mandate: Its mandate is to evolve standard technical terminology in all Indian Languages. It also publishes quarterly Journals named 'Vigyan Garima Sindhu' and 'Gyan Garima Sindhu'
- ✓ Background: It was established in 1961 by a Presidential Order issued under Article 344 (4) of the Constitution of India. Article 344 deals with "Commission and Committee of Parliament on official language."
- ✓ Governance: It functions under the Department of Higher Education, Union Ministry of Education.
- ✓ Headquarters: New Delhi.

functions:

- Preparation and Publication of Bilingual and Trilingual Glossaries involving English/Hindi and other Indian Languages.
- Preparation and Publication of National terminology.
- Identification and Publication of School Level Terminology and Departmental Glossaries.
- Identification of Pan Indian Terms.
- Preparation of Definitional Dictionaries and Encyclopaedias.
- Preparation of University level textbooks, monographs and journals.
- Grant-in-Aid to Granth Academies, Textbook Boards and University Cells for University level books in regional languages.
- Propagation, expansion and critical review of terms coined and defined through training/orientation programmes, workshops, seminars etc.
- Free distribution of Publications.
- Providing necessary terminology to the National Translation Mission.

In the process of evolution of scientific and technical terminology and reference material in Hindi and Indian Languages, the Commission shall have collaboration of State Governments, Universities, Regional Text-Book Boards and State Granth Academies.

2. **Non- Communicable Diseases (NCDs)**

In News: The Ministry of Health and Family Welfare (MoHFW) has renamed the 'NPCDCS' programme as 'NP-NCD' after addition of more non-communicable diseases (NCDs) under it.

NP-NCD

- ✓ The Ministry of Health and Family Welfare (MoHFW) has added more non-communicable diseases (NCDs) – such as non-alcoholic fatty liver disease, chronic kidney disease etc. – to the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS).
- ✓ In this background the Ministry has decided to rename 'NPCDCS' as 'National Programme for Prevention & Control of Non-Communicable Diseases [NP-NCD].
- ✓ The programme is being implemented under the National Health Mission (NHM) across the country. Under it, 677 NCD district-level clinics, 187 District Cardiac Care Units, 266 District Day Care Centres and 5,392 NCD Community Health Centre-level clinics have been set up.

National NCD Portal

- ✓ The mobile application (or software) named Comprehensive Primary Healthcare Non-Communicable Disease (CPHC NCD IT) rolled out under the programme for screening and management, will now be renamed 'National NCD Portal'.
- ✓ The portal enables population enumeration, risk assessment, and screening for five common NCDs, including hypertension, diabetes, and oral, breast and cervical cancers of the population aged above 30 years.

Non-Communicable Diseases (NCDs) in India

- ✓ A study titled ‘India: Health of the Nation’s States - The India State-Level Disease Burden Initiative in 2017’ by Indian Council of Medical Research (ICMR) estimated that the proportion of deaths due to NCDs in India have increased from 37.9% in 1990 to 61.8% in 2016.
- ✓ The four major NCDs are cardiovascular diseases (CVDs), cancers, chronic respiratory diseases (CRDs) and diabetes which share four behavioural risk factors – unhealthy diet, lack of physical activity, and use of tobacco and alcohol.

3. Petersberg Climate Dialogue

In News: The Petersberg Dialogue on Climate Change was held in Berlin from May 2-3, 2023.

More about the news

- ✓ The Petersberg Climate Dialogue was hosted by Germany and the United Arab Emirates, which is hosting the 28th Conference of Parties (COP28) to the United Nations Framework Convention on Climate Change.
- ✓ Ministers from 40 countries attended the conference to discuss the way forward towards COP28.
- ✓ The discussions at the event veered around global renewables target, climate finance and Global Stocktake.

Summit highlights

Global renewables target

- ✓ According to members, in order to limit global warming to 1.5°C, the world needs to make sharp cuts in their greenhouse gas emissions.
- ✓ They also initiated discussions around a potential global target for renewables at the next climate conference.

Fossil fuels: Phaseout production or reduce emissions?

- ✓ Members agreed to be laser focused on phasing out fossil fuel emissions, while phasing up viable, affordable zero-carbon alternatives.
- ✓ They called for a tripling of renewable energy capacity by 2030 followed by a doubling in 2040, & the address was focused on reducing fossil fuel ‘emissions’.

On track for \$100 billion climate finance:

- ✓ According to members, developed countries are “on good track” to deliver the \$100 billion per year they had promised to mobilise by 2020 during the COP15 in 2009.
 - Although this is good news, delivering the \$100 billion goal in 2023 might be a little too late.
- ✓ The \$100 billion is likely to be a gross underestimation of the true need for climate finance in developing countries.
 - A recent estimate pegs climate finance needs at \$1 trillion per year by 2030 for emerging markets alone.
 - This means that climate finance needs are more than 10 times the amount that developed countries have been able to mobilise, 14 years after committing to the \$100 billion figure.

Global Stocktake:

- ✓ 2023 is the year for the Global Stocktake.
 - Global Stocktake is essentially a periodic review of global climate action which aims to assess whether current efforts will enable us to reach the objectives set out in the Paris Agreement.
 - This is the first Global Stocktake year since the Paris Agreement was signed in 2015 and the report has been underway for the past two years.
 - It is set to be released in September of 2023.

Stocktake outcomes:

- Members noted that the Global Stocktake outcome should focus on how climate change impacts, actions and responses have a bearing on the developmental priorities of developing countries including eradication of poverty.
- The first Global Stocktake should seek to convey a message on sustainable lifestyles as well as sustainable consumption to inform the next round of Nationally Determined Contributions and enhanced international cooperation.

ANSWER WRITING

Q. Critically analyze the role of electoral bonds in making political donations transparent and cleansing the system of political funding in India.

An Electoral Bond is a financial instrument for making donations to political parties. They are money instruments like promissory notes that can be bought by companies and individuals in India and donated to a political party, which can then encash these bonds. They were introduced in 2018 through an Electoral Bond Scheme with the objective to bring transparency and cleanse the political funding system in the country.

Advantages of using electoral bonds:

- Brings transparency in political funding: Certain Provisions which aim at bringing transparency are:
 - ✓ Only political parties registered under Section 29A of the Representation of the People Act, 1951 and which secured not less than one per cent of votes polled in the last general election are eligible to receive electoral bonds.

- ✓ Further, electoral bonds shall be encashed by an eligible political party only through a bank account with an authorised bank.
- ✓ The donor also has to fulfil the mandatory KYC procedure at the bank and the allocated bonds remain valid only for 15 days.
- Countering electoral corruption: The basic aim of electoral bonds is to reduce rampant political corruption during the elections. It not only aims to stop political funding through unauthentic and illegal sources but also aims to bring substantive changes to the entire electoral funding mechanism.
- Fight the menace of black money: The purchase is only available through a restricted number of banks, and only cheques and digital payments are accepted. Electoral bonds, therefore, act as a substitute for cash donations and aim to fight the menace of black money.
- Maintains anonymity of donors: The electoral bond scheme provides anonymity as the bonds do not bear the name of donors. This becomes important to prevent harassment or attack on donors by political opponents.

Concerns raised with respect to the use of electoral bonds:

- Implication on transparency in political parties' finances: The amendments brought through the Finance Act 2017 do not require political parties to mention the names and addresses of those contributing by way of electoral bonds in their annual contribution reports filed with the Election Commission. This will have a major implication on transparency in political party finances and will fundamentally alter the perception around political donations.
- Infringe the citizens 'Right to Know': The political parties are exempted from disclosing donations received through electoral bonds. This means the voters will not know which individual, company, or organisation has funded which party, and to what extent. Before the introduction of electoral bonds, political parties had to disclose details of all their donors, who have donated more than Rs. 20,000. The change infringes on the citizen's 'Right to Know' and makes the political class even more unaccountable.
- Uncapped corporate donations: The removal of the 7.5% cap on corporate donations provides for unaccounted and unlimited donations to political parties. RBI and the Election Commission both expressed their concerns and serious reservations that these bonds could become tools for money laundering for shell companies in the name of foreign funding.
- Increase in political parties' post-electoral bond scheme: Electoral bonds are being misused by the political parties and are encouraging the use of black money. In 2017 there were a total of 1500 political parties in India, however, by 2021 the number increased to 2,858. A vast majority of these parties will never contest elections and may be involved in money laundering activities or may simply be using their status to turn black money into white.
- Leading to crony capitalism: According to a report by the Association for Democratic Reform (ADR) 93.95% of the total value of bonds purchased were in the denomination of Rs 1 crore, indicating that these bonds are being purchased by corporates rather than individuals.
- Foreign donations: Amendments to the Foreign Contributions Regulation Act permitted acceptance of donations from foreign companies. This would allow unchecked foreign funding of political parties in India, which could lead to Indian policies being influenced by foreign companies.

Transparency and accountability have been at the fore of the electoral reforms and only free and fair elections can guarantee the growth of Indian democracy. Given the concerns raised with respect to electoral bonds, other measures, such as state funding of elections, auditing of accounts of political parties and strengthening the mandate of the election commission, should be considered.

MCQs

1. Consider the following statements with reference to Commission for Scientific and Technical Terminology (CSTT)
 1. It is a statutory body.
 2. It is functioning under NITI Ayog.
 3. The main objective is to evolve standard terminology, propagate its use, and distribute it widely.

Which of the above statement/s is/are correct?

 - a) 1 only
 - b) 2 and 3 only
 - c) 1 and 3 only
 - d) 3 only
2. Uthuru Thila Falhu (UTF) Atoll was recently in the news. It is located in which of the following countries?
 - a) **Maldives**
- b) Fiji
- c) Mauritius
- d) Madagascar
3. Consider the following statements about Raising and Accelerating MSME Performance:
 1. It is a World Bank assisted Central Sector Scheme.
 2. The scheme aims at improving access to market and credit.
 3. It will strengthen the coordination between the institutions at the National and State levels.

Which of the statement/s given above is/are correct?

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

4. With reference to 14th Petersberg Dialogue on Climate Change which was recently held consider the following

1. The Petersberg Dialogue on Climate Change held annually, which a formal dialog is between governments.
2. The Climate Dialogue was co-chaired by Germany and the United Kingdom (UK).

Which of the above statement/s is/are correct?

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

5. Consider the following statements about Nagar hole national park.

1. Nagarahole Tiger Reserve, formerly known as Rajiv Gandhi (Nagarahole) National Park, is a wildlife reserve in Karnataka.
2. It is a part of the Nilgiri Biosphere Reserve.
3. It is named after the river Nagarahole, which is the Kannada term for 'Serpent River'.
4. Jenu Kurubas, Betta Kurubas, Paniyas, Yaravas are the original inhabitants of the forest.

Which of the above statements are correct?

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

6. Consider the following statements

1. Hemoglobinopathies are a group of disorders that are passed down through families (inherited) in which there is abnormal production or structure of haemoglobin molecules.
2. Thalassemia, Hemophilia and Sickle Cell Disorder all come under the umbrella of hemoglobinopathies.
3. In India, thalassemia, along with two other blood disorders namely Hemophilia and Sickle Cell Disease was recognised as a benchmark disability in the Rights of Persons with Disabilities Act, of 2016.

Which of the above statements are correct?

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

7. Consider the following statements

1. Rheumatoid arthritis, or RA, is an autoimmune and inflammatory disease, which means that your immune system

attacks healthy cells in your body by mistake, causing inflammation (painful swelling) in the affected parts of the body.

2. RA mainly attacks the joints, usually many joints at once.
3. The tissue damage can cause long-lasting or chronic pain, unsteadiness (lack of balance), and deformity (misshapeness).

Which of the above statements are incorrect?

- a) 1 only
- b) 2 only
- c) 1 and 3 only
- d) None of the Above**

8. Consider the following statements

1. ISRO has launched a new introductory-level online training programme called 'Space Science and Technology Awareness Training (START)'.
2. It is aimed at post-graduate and final-year undergraduate students of physical sciences and technology.
3. It will be delivered by the scientists from Indian academia only.

Which of the above statements are correct?

- a) 1 only
- b) 2 only
- c) 1 and 2 only**
- d) None of the Above

9. Tungnath temple is recently in news, is situated in which of the following state?

- a) Uttarakhand**
- b) Karnatak
- c) Himachal pradesh
- d) Madhya pradesh

10. Consider the following statements

1. The Arab League or the League of Arab States is a regional organization in the Arab world, which is located in Northern Africa, Western Africa, Eastern Africa, and Western Asia.
2. The Arab League was formed in Cairo on 22 March 1945 and Currently, the League has 22 members.
3. The League's main goal is to "draw closer the relations between member states and co-ordinate collaboration between them, to safeguard their independence and sovereignty, and to consider in a general way the affairs and interests of the Arab countries'.

Which of the above statements are correct?

- a) 1 only
- b) 2 only
- c) 1 and 2 only
- d) All of the above**