

GOVERNANCE- WELFARE SCHEMES, E-GOVERNANCE, SERVICES ETC.**Yuktdhara: New Geospatial Planning Portal**

Recently, the Ministry of Rural development has launched a new geospatial planning portal, 'Yuktdhara' to help in facilitating the new MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) assets with the use of remote sensing and GIS (Geographic Information System) based information.

- It is a new portal under 'Bhuvan'.

Key Points

- It is a culmination of joint efforts of the Indian Space Research Organisation (ISRO) and the Ministry of Rural development made towards realising a G2G (Government-to-Government) service for rural planning in support of decentralised decision making.
- Previously launched, ISRO's Geoportal Bhuvan is presently a de-facto geospatial platform for several developmental planning activities across India.
- It will serve as a repository of assets (geotags) created under the various National Rural Development Programmes, such as MGNREGA, Per Drop More Crop Programmes, Integrated Watershed Management Programme, and Rashtriya Krishi Vikas Yojana, along with the field photographs.
- It will integrate a wide variety of thematic layers, multi-temporal high-resolution earth observation data with the analysis tool.
- Planners will be able to analyse previous assets under various schemes and facilitate the identification of new works using online tools. Prepared plans will be then evaluated by appropriate authorities under State Departments.

Bhuvan Portal:

- It is a type of web portal used to find and access geographic information (geospatial information) and associated geographic services (display, editing, analysis, etc.) via the Internet.
- It shows the true borders of the country as per the information available from the Government of India.
- By using MapmyIndia maps and applications instead of the foreign map apps, users can better protect their privacy.
- It is well aligned with the government's Mission of Atmanirbhar Bharat.

Other Rural Development Programmes:

- Deen Dayal Antyodaya Yojana – National Rural Livelihoods Mission (DAY-NRLM).
- Pradhan Mantri Gram Sadak Yojana (PMGSY).
- Pradhan Mantri Awas Yojana – Gramin.
- Pradhan Mantri Kisan SAMPADA Yojana.
- Gobar Dhan Yojana.

INTERNATIONAL RELATION**India-Philippine Maritime Exercise**

Recently, the Indian Navy carried out a Maritime Partnership Exercise with the Philippine Navy in the West Philippine Sea.

- Earlier Indo-UK Naval Exercise, 'Konkan 2021' was held in the English Channel.

Key Points

- It will strengthen bilateral collaboration in the maritime domain towards a collective aim of ensuring a stable, peaceful and prosperous Indo-Pacific.
- This is in a series of exercises that India is conducting with littoral nations that share their maritime boundaries with China as part of its deployment.
- Indian naval ships INS Ranvijay and INS Kora are currently deployed to the Western Pacific with an aim to strengthen maritime security collaboration with partner nations.
- The Quad countries - India, the US, Australia and Japan - will conduct the next edition of the Malabar naval exercise off the coast of Guam in the face of China's growing military muscle-flexing in the Indo-Pacific.
- China claims sovereignty over all of the South China Sea (arm of the Western Pacific Ocean) a huge source of hydrocarbons. However, several ASEAN Association of Southeast Asian Nations member countries, including Vietnam, the Philippines and Brunei, have counterclaims.

SCIENCE AND TECHNOLOGY**Human Trials for New HIV Vaccine**

Moderna, the Massachusetts-based American biotechnology company, will begin human trials for its novel mRNA vaccine (mRNA-1644) for HIV (Human Immunodeficiency Virus).

This is the first trial for an mRNA vaccine for HIV after the success of mRNA vaccines with Covid-19.

According to the World Health Organization, there were around 37.7 million living with HIV as of 2020.

Key Points

- mRNA Vaccine vs Traditional Vaccines:
- Vaccines work by training the body to recognise and respond to the proteins produced by disease-causing organisms, such as a virus or bacteria.
- Traditional vaccines are made up of small or inactivated doses of the whole disease-causing organism, or the proteins that it produces, which are introduced into the body to provoke the immune system into mounting a response.
- mRNA vaccines tricks the body into producing some of the viral proteins itself.
- They work by using mRNA, or messenger RNA, which is the molecule that essentially puts DNA instructions into action. Inside a cell, mRNA is used as a template to build a protein.

mRNA vaccine for HIV:

- The vaccine is expected to work similar to the Covid-19 vaccine — by getting the body's cells to produce the HIV virus' spike protein triggering an immune response.
- The larger purpose of stimulating the B cells is to generate what are called broadly neutralising antibodies (bnAbs), which are specialised blood proteins that attach to the surface proteins of HIV and disable them by accessing key but hard-to-reach regions on the virus.
- B-cells fight bacteria and viruses by making Y-shaped proteins called antibodies, which are specific to each pathogen and are able to lock onto the surface of an invading cell and mark it for destruction by other immune cells.
- Over the last decade, there have been advances in identifying new bnAbs from HIV-infected individuals that were seen to target very specific sites in the outer envelope of the HIV.
- Lab-based analysis and tests on animals have improved the understanding of how the knowledge of these sites can be used to make immunogens.
- An immunogen refers to a molecule that is capable of eliciting an immune response by an organism's immune system, whereas an antigen refers to a molecule that is capable of binding to the product of that immune response.
- So, an immunogen is necessarily an antigen, but an antigen may not necessarily be an immunogen.

Expected Benefits:

RNA-based immunogens are believed to be a promising alternative because they do not involve the use of a live virus, can be made relatively easily, can be quickly deployed and safely administered.

Challenges:**Issue of Reach:**

- The experience with the Moderna and Pfizer vaccines shows, getting essential jabs to the regions where they are most needed is the biggest stumbling block.
- Of the people living with HIV, over two-thirds are in Africa. Any success in containing the HIV pandemic would mean drastically cutting the rates of transmission there.

Sensitive to Temperature:

m-RNA vaccines are sensitive to temperature in storage, and is a challenge for developing countries.

Mutation of HIV:

HIV has mutated into several variants and is an insidious virus, and it will be many years before definitive proof of the success of the m-RNA approach can be established.

INDIAN HERITAGE AND CULTURE**World Sanskrit Day**

World Sanskrit Day (Viswa Samskrita Dinam) was celebrated on 22nd August 2021.

- In India, Sanskrit is a Classical and an Eighth Schedule language.
- In 2020, the Uttarakhand Government decided to develop 'Sanskrit Grams' across the state to teach use of Sanskrit regularly.

Key Points

- It is an annual event aimed to promote revival and maintenance of Sanskrit Language.
- It is celebrated on Poornima day (Full Moon) of the Shraavana month in the Hindu calendar.
- The day essentially speaks of the importance of learning and knowing it, despite it being not as widely spoken as in ancient times.

- The Day was celebrated for the first time in the year 1969 after the Union ministry of education issued notifications to state and central governments.
- The Sanskrit organisation Samskrita Bharati (NGO) is involved in promoting the day.
- Some Important Facts about Sanskrit Language:
- It is considered to be one of the oldest languages in the world. It is an old Indo-Aryan language in which the most ancient documents, Vedas, are composed in what is called Vedic Sanskrit.
- Sanskrit used to be a pan-Indian language in the Vedic period and most languages in the country have branched out of Sanskrit.
- It lost, somehow, to modern derivations and regional dialects.
- Classical Sanskrit, a language close to late Vedic as then used in the northwest of the subcontinent, was elegantly described in one of the finest grammars ever produced, the Aṣṭadhyayi (“Eight Chapters”) composed by Paṇini (c. 6th–5th century BCE).
- Sanskrit has been written both in Devanagari script and in various regional scripts, such as Śāradā from the north (Kashmir), Bāṅglā (Bengali) in the east, Gujarati in the west, and various southern scripts, including the Grantha alphabet, which was especially devised for Sanskrit texts.
- It is considered a scientific language and is believed to be the most computer-friendly language.
- In 1786, English Philologist William Jones suggested in his book ‘The Sanscrit Language’ that Greek and Latin were related to Sanskrit.
- The language, however, is not entirely dead. A village in the Shimoga district of Karnataka, called Mattur, is believed to have preserved the language.
- The only Sanskrit newspaper in the world is called ‘Sudharma’. The newspaper has been published since 1970 from Mysore in Karnataka and is also available online.
- Some of the eminent Sanskrit authors are Panini, Patanjali, Adi Shankaracharya, Ved Vyas, Kalidas etc.

Important Authors and Works in Sanskrit:

- Bhasa (for example, his Svapnavasavadatta - Vasavadatta in a Dream), who is assigned widely varying dates but definitely worked prior to Kālidāsa, who mentions him.
- Kalidasa, dated anywhere from the 1st century BCE to the 4th century CE, whose works include Śakuntalā, Vikramorvaśīya, Kumārasambhava and Raghuvamśa.
- Sudraka and his Mṛicchakatika (“Little Clay Cart”), possibly dating to the 3rd century CE.
- Ashvaghosha’s Buddhacarita is one of the finest examples of Buddhist literature.
- Bhāravi and his Kirātārjunīya (“Arjuna and the Kirāta”), from approximately the 7th century.
- Māgha, whose Śiśupālavadha (“The Slaying of Śiśupāla”) dates to the late 7th century.
- The two epics Rāmāyaṇa (“Life of Rāma”) and Mahābhārata (“Great Tale of the Bhāratas”) were also composed in Sanskrit, and the former is esteemed as the first poetic work (ādikāvya) of India.
- Promotion of Sanskrit by the Central Government:
- The New Education Policy (NEP) laid an ambitious path for “mainstreaming” the language. Sanskrit is to be offered in schools, including as one of the language options in the three-language formula, as well as in higher education.
- NEP also stated that Sanskrit universities will be turned into multi-disciplinary institutions of higher learning.
- The government has established the Rashtriya Sanskrit Sansthan in Delhi as a nodal authority to promote Sanskrit.
- Providing financial assistance to Adarsh Sanskrit Mahavidyalaya/Shodha Sansthans.
- Award of merit scholarships to students of Sanskrit Pathshala to College level.
- Financial assistance to NGOs/Higher Educational Institutions of Sanskrit for various Research Projects/Programmes.
- Retired eminent Sanskrit scholars are engaged under the Shastra Chudamani scheme for teaching.
- Sanskrit is also taught through Non-formal Sanskrit Education (NFSE) programme, by setting up Non-Formal Sanskrit learning centres, in reputed institutions like Indian Institutes Technology, Ayurveda institutions, Modern Colleges and Universities.
- Presidential awards for Sanskrit Language are awarded annually to 16 senior scholars and to 5 young scholars.
- Financial Assistance for Publication, Reprint of rare Sanskrit books.

- Ashtaadashi containing eighteen Projects for sustaining the growth of Sanskrit has been implemented.

BIODIVERSITY AND ECOSYSTEM

Delhi's New Smog Tower

Recently, the Chief Minister of Delhi inaugurated the country's first 'smog tower' in Connaught Place. It was inaugurated months before the pollution level spikes in the national capital due to burning of crop waste (stubble burning) by farmers.

Key Points

- In January 2020, the Supreme Court directed that two towers should be installed by April as a pilot project.
- The smog tower at Connaught Place (CP) is the first of these towers. The second tower, being constructed at Anand Vihar in east Delhi with CPCB as the nodal agency, is nearing completion.
- Smog towers are structures designed to work as large-scale air purifiers.
- They are usually fitted with multiple layers of air filters, which clean the air of pollutants as it passes through them.
- China has the world's largest smog tower.

Working of the Tower:

- It uses a 'downdraft air cleaning system' where polluted air is sucked in at a height of 24 m, and filtered air is released at the bottom of the tower, at a height of about 10 m from the ground.
- It is different from the system used in China, where a 60-metre smog tower uses an 'updraft' system — air is sucked in from near the ground, and is propelled upwards by heating and convection. Filtered air is released at the top of the tower.

Developed by:

- Tata Projects Limited (TPL) built it with technical support from IIT-Bombay and IIT-Delhi, which will analyse its data.
- National Biofuel Coordination Committee (NBCC) India Ltd is the project management consultant.
- Delhi Pollution Control Committee was in charge of the Project.

Need:

- According to a report by CPCB, an increase of 258% to 335% has been observed in the concentration of PM10 in Delhi since 2009.
- But the most prominent pollutant in Delhi and neighbouring areas is PM2.5
- PM2.5 refers to fine particles which penetrate deep into the body and fuel inflammation in the lungs and respiratory tract, leading to risks of cardiovascular and respiratory problems, including a weak immune system.
- Delhi was the most polluted capital city in the world in 2020 for the third consecutive year, according to a report by a Swiss group (released in March 2021) that ranked cities based on their air quality measured in terms of the levels of ultrafine particulate matter (PM 2.5).

Challenges:

- It may provide immediate relief from air pollution in a small area but they are a costly quick-fix measure with no scientific evidence to back their efficacy in the long term.
- The tower could have an impact on the air quality up to 1 km from the tower.
- However, the actual impact will be assessed by IIT-Bombay and IIT-Delhi in a two-year pilot study that will also determine how the tower functions under different weather conditions, and how levels of PM2.5 vary with the flow of air.
- Other Steps Taken to Tackle the Problem of Pollution in Delhi:
- Subsidy to farmers for buying Turbo Happy Seeder (THS) which is a machine mounted on a tractor that cuts and uproots the stubble, in order to reduce stubble burning.
- The introduction of BS-VI vehicles, push for electric vehicles (EVs), Odd-Even as an emergency measure and construction of the Eastern and Western Peripheral Expressways to reduce vehicular pollution.
- Implementation of the Graded Response Action Plan (GRAP). It is a set of curbs triggered in phases as the air quality deteriorates, which is typical of the October-November period.
- Use of Green Crackers.

- Development of the National Air Quality Index (AQI) for public information under the aegis of the CPCB.

Way Forward

Since there is no scientific evidence that proves its efficiency, governments should instead address root causes and promote renewable energy to tackle air pollution and reduce emissions.

It will be really unfortunate if other cities decide to follow suit and set up these expensive, ineffective towers.

IMPORTANT FACTS FOR PRELIM**Jim Corbett Tiger Reserve: Uttarakhand**

Recently, the Delhi High Court has asked the National Tiger Conservation Authority (NTCA) to consider as representation a petition to stop the alleged illegal construction of bridges and walls within tiger breeding habitat of the Corbett Tiger Reserve.

National Tiger Conservation Authority

- It is a statutory body under the Ministry of Environment, Forests and Climate Change.
- It was established in 2005 following the recommendations of the Tiger Task Force.
- It was constituted under enabling provisions of the Wildlife (Protection) Act, 1972, as amended in 2006, for strengthening tiger conservation, as per powers and functions assigned to it.

Key Points

- It is located in Nainital district of Uttarakhand. The Project Tiger was launched in 1973 in Corbett National Park (first National Park of India), which is part of Corbett Tiger Reserve.
- The national park was established in 1936 as Hailey National Park to protect the endangered Bengal tiger.
- It is named after Jim Corbett who played a key role in its establishment.
- The core area forms the Corbett National Park while the buffer contains reserve forests as well as the Sonanadi Wildlife Sanctuary.
- The entire area of the reserve is mountainous and falls in the Shivalik and Outer Himalaya geological provinces.
- Ramganga, Sonanadi, Mandal, Palain and Kosi are the major rivers flowing through the Reserve.

Flora:

- According to the botanical survey of India, Corbett has 600 species of plants - trees, shrubs, ferns, grass, climbers, herbs and bamboos. Sal, Khair and Sissoo are the most visible trees found in Corbett.

Fauna:

- Apart from tigers, Corbett also has leopards. Other mammals such as jungle cats, barking deer, spotted deer, sambar deer, sloth etc. are also found there.

Other Major Protected Areas of Uttarakhand:

- Nanda Devi National Park.
- Valley of Flowers National Park.
- Valley of Flowers National Park and Nanda Devi National Park together are a UNESCO World Heritage Site.
- Rajaji National Park.
- Gangotri National Park.
- Govind National Park

DAILY ANSWER WRITING PRACTICE

Qns. Cooperative sector's immense transformative power has not been optimally realised so far. In the light of the statement suggest measures to fully utilise the sector's potential. (250 Words) Ans.

Introduction

A cooperative is an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise. The Constitution (97th Amendment) Act, 2011 added a new Part IXB right after Part IXA (Municipals) regarding the cooperatives working in India.

Body**Significance of Cooperatives**

Protect Vulnerable From Market Distortion: Cooperation is essential because the market cannot take care of the needs of the vulnerable. Wherever cooperatives have succeeded, they have addressed the issue of market distortions.

Prevent Distress Sales: Cooperative societies, equipped with basic infrastructure and financial resources, prevent distress sales and ensure bargaining power.

Decentralised Development: They have the potential to realise the paradigm of decentralised development.

Successful Business Models: Exist in at least two sectors — dairy and fertilisers. These practices can be replicated for other sectors as well

Challenges with Cooperative Society

Mismanagement and Manipulation: In the elections to the governing bodies, money became such a powerful tool that the top posts of chairman and vice-chairman usually went to the richest farmers who manipulated the organization for their benefits.

Lack of Awareness: People are not well informed about the objectives of the Movement, rules and regulations of co-operative institutions.

Restricted Coverage: Most of these societies are confined to a few members and their operations extended to only one or two villages.

Functional Weakness: The Co-operative Movement has suffered from inadequacy of trained personnel.

Measures to be taken

Scale of Economy: Segments of the primary sector can be successfully scaled up and turned into cooperatives, followed by segments of secondary and tertiary sectors.

Promote Brand of Cooperative: There will also be a need to promote the brand of cooperatives through upgradation and value addition to the quality of products and services delivered by them.

Flexibility to Keep Abreast with Business Environment: The Act, rules and by-laws will be required to provide flexibility to keep abreast with the business environment.

Avoiding Overregulation: With over-regulation, cooperatives will end up losing their autonomous character.

With the government leaving cooperative societies to fend for themselves, these societies can flounder. It is difficult but desirable that this dichotomy is resolved.

Transparency: The government will have to ensure that processes are transparent. The integrity of the managing committees and their operational autonomy is necessary.

Training and Capacity Building: Cooperative departments will have to evaluate the training needs of cooperatives, along with designing and imparting training interventions to ensure that they are at par with the current business environment.

Conclusion

At the local level, cooperative societies should continue to cater to the needs of their members across segments of the primary sector. At the national level, they must emerge as organisations capable of competing with the behemoths of the private sector.

DAILY QUIZ

1. Consider the following pairs:

Important Sanskrit Works Authors

1. Ashtadhyayi Panini
2. Kalidasa Mrichhakatika
3. Ashvaghosha Buddhacharita

Which of the pairs given above is/are correct?

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

2. Consider the following statements:

1. It is the first National Park of India.
2. It was established in 1936 as Hailey National Park to protect the endangered Bengal tiger.
3. It falls in the areas of Shivalik and Outer Himalayan geological provinces.

The above statements most appropriately describe which of the following National Parks of India?

- a) Dachigam National Park
- b) **Jim Corbett National Park**
- c) Rajaji National Park
- d) Nanda Devi National Park

3. With reference to the 'Yuktdhara portal', consider the following statements:

1. It is a new geospatial planning portal under 'Bhuvan'.

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2. It is a joint effort of the Indian Space Research Organisation (ISRO) and the Ministry of Science and Technology.
3. It will serve as a repository of geotagged assets created under the various National Rural Development Programmes.

Which of the statements given above is/are correct?

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

4. Consider the following statements:

1. The zooxanthellae supply the coral with organic products of photosynthesis.
2. The zooxanthellae are responsible for the unique and beautiful colors of corals.

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

5. With reference to the Earthquakes, consider the following statements:

It is caused by the sudden release of the transmitted pressure of moving lithospheric or crustal plates.

1. The location below the earth's surface where the earthquake starts is called the epicentre.
2. Wadati-Benioff zones are associated with the deep earthquakes.

Which of the above statements is/are correct?

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