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AN INITIATIVE BY
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Learn FINITE

The information in this magazine is intended to provide users with resources and information which they may find useful and of interest.

We take all reasonable steps to keep this information current and accurate, but errors can occur.

We express our gratitude to all our team members and thankful to all the advisors for making first step in publishing a small magazine.

Our Methodology for this Magazine

We have used official website pib.nic.in to collect important press release important for Exam

The topics has been categorised subject wise so that is is easy for aspirants to read in flow and relate the topics

Background information has been provided so static related to current can be covered

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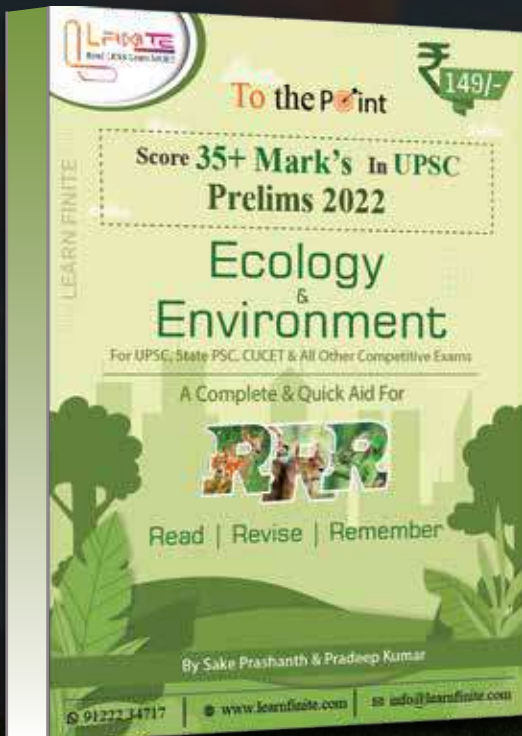
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An Initiative By Pradeep Kumar

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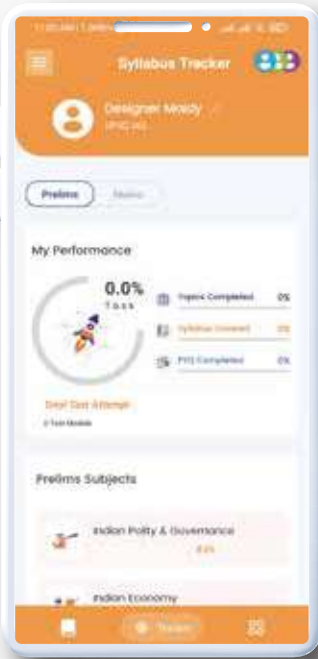
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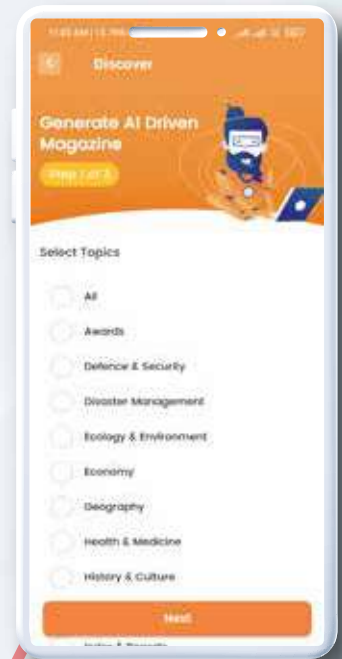
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History & Culture

All-Women's Art Exhibition titled 'Akshya Patra'

In news

Culture Minister inaugurates All-Women's Art Exhibition titled 'Akshya Patra' in New Delhi on the occasion of International Women's Day.

Highlights

- The exhibition will last until March 20 and showcase more than 250 artworks from over 12 countries, including those created by 29 talented female artists that attended the three-day All Women's National Art Camp at Garhi Studios
- 'Akshya Patra' is the inexhaustible vessel which provides to all, mirroring the role of contemporary woman as a provider for her family and society.
- The works on display, through their artistic contributions, succinctly portray the feminine journeys, through life's joys and sorrow

Akshaya Patra

Akshaya Patra meaning inexhaustible vessel, is an object from Hindu mythology. It was a wonderful vessel given to Yudhishtira by the sun-god Surya which held a never-depleting supply of food to the Pandavas every day.

Preservation and Documentation of Threatened Tribal Languages

In news

Ministry of Tribal Affairs extends support to TRIs for carrying out various research & documentation activities including programs for documentation of tribal languages, dialects, art, culture, dance, music and development of bilingual Primers

Highlights

- It is done under the scheme of 'Support to Tribal Research Institute (TRIs).
- TRIs are conducting documentation and preservation of endangered tribal languages through preparation of primers, dictionaries and organization of cultural programmes.
- Mother Tongue Based Multi-Lingual Education (MTBMLE), an innovative pedagogic initiative which plays a key role in preserving tribal languages is adopted in Andhra Pradesh.
- This approach bridges gap between home and school languages which enable better learning.
- The Ministry has also recently developed a digital document repository (repository.tribal.gov.in) where TRIs have now started uploading all the activities, document, research reports, publications, which is available in public domain.

Causes of language endangerment

- Among the **causes of language endangerment** cultural, political and economic marginalization accounts for most of the world's **language endangerment**.
- Cultural dominance occurs when literature and higher education is only accessible in the majority **language**.

Conservation of the Sun Temple at Konark

Why in news?

Information was given by the Minister of State (I/c) of Culture and Tourism, Shri Prahlad Singh Patel in a written reply in the Rajya Sabha.

Highlights

- Methods such as cleaning of the surface by paper pulp method, consolidation and strengthening of stones wherever needed, plantation of trees in surrounding area to prevent mechanical erosion by wind action, removal of water by installing pumping sets, and periodic biocidal treatment for control of vegetative intrusion.
- Conservation work of monuments, including Sun Temple, Konark is a continuous process and the said monument, also a World Heritage Site, is in a good state of preservation due to regular care by ASI.
- ASI has introduced plain stones only where original stones were missing or for filling of gaps to ensure structural stability and to prevent water ingress. All conservation work is carried out as per ASI's conservation policy, 2014.

Sun Temple, Konark

- Konark Sun Temple, located in the eastern State of Odisha near the sacred city of Puri, is dedicated to the sun God or Surya.
- It is a monumental representation of the sun God Surya's chariot; its 24 wheels are decorated with symbolic designs and it is led by a team of six horses.
- It is a masterpiece of Odisha's medieval architecture and one of India's most famous Brahman sanctuaries.
- The Konark temple is widely known not only for its architectural grandeur but also for the intricacy and profusion of sculptural work.
- It marks the highest point of achievement of Kalinga architecture depicting the grace, the joy and the rhythm of life all its wondrous variety.
- The temple declared a world heritage by UNESCO was built in A.D. 1250, during the reign of the Eastern Ganga King Narasimhadeva-I (A.D. 1238-64).

Ayya Vaikunda Swamikal

In news

The Prime Minister, Shri Narendra Modi has paid his respects to Ayya Vaikunda Swamikal on his birth anniversary

About Ayya Vaikunda

- Ayya Vaikundar (Vaikunda Swami) (1809-1851), a great humanist and social thinker, lived in the Princely Kingdom of Travancore in the early decades of the 19th Century Kerala, is still remembered as the first well known social reformer in India who critiqued the caste discrimination and religious hierarchy and fought against the practice of untouchability.
- Being the founder of 'Samathwa Samajam', the first socio reform movement in India (1836), Ayya Vaikundar is considered as the pioneer of such revolutionary movements in India.
- His exhortation 'One caste, One religion, One Clan, One world, One God' is world famous.
- His theory and practice like 'samathwa samajam', 'sama panthi bhojan', 'thottu namam podunkal' were much enough to cultivate a thought of equality and unity in Indian minds.

Conservation of Ancient Folk Cultures

In news

To protect, preserve & promote various forms of folk art and ancient folk cultures throughout the country including Jharkhand, Bihar and Kerala, the Government of India has set up seven Zonal Cultural Centres (ZCCs)

Headquarters

Headquarters of zonal cultural centres are located at Patiala, Nagpur, Udaipur, Prayagraj, Kolkata, Dimapur and Thanjavur"

Conservation of cultures

- Ancient folk cultures being preserved in Jharkhand are Faguwa Nritya, Turi Nritya, Faguwa Nritya, Turi Nritya, Paika Nritya, Hodopathy, Tribal dance (Karam Nritya).
- Ancient folk cultures being preserved in Bihar are Lok Gatha "Reshma Chuharmal" (Begusarai), Lok Gatha "Bihula Bishari" (Purnia), Lok Gatha "Naradi" (Begusarai), Bidesia Lok Natya (Bhojpur region), Godana Painting (Madhubani), Lok Natya "Hirni-Birni" (Magadh region), Panwaria, Domkach & Sohar Khilona folk dance (All regions of Bihar State), Domkach folk dance (All regions of Bihar State), Jharni & Jhinhia folk dance (Mithilanchal Area), Bidesia (Bhojpur Area), Bihar Ke Paramparik Natya (All regions of Bihar State), Drupad Dhamar, Godna Geet, Sikki Kala, Tikuli Art and Madhubani Painting.
- Ancient folk cultures being preserved in Kerala are Poorakali, Malayankettu & Kannerpattu (Kannur), Daffumuttu (Malabar), Kanyarkali (Thrissur) and Arabanaumuttu (Kozhikode)

Rakhi Garhi

In news

Rakhi Garhi Is Being Developed as One of The Five Identified Iconic Archaeological Sites

Highlights

- The ancient site of Rakhi-Khas and Rakhi-Shahpur are collectively known as Rakhigarhi, located on the right bank of now dried up Palaeo-channel of Drishadvati.
- Seven (07) mounds are located here.
- It is the site of a pre-Indus Valley Civilisation settlement going back to about 6500 BCE. Later, it was also part of the mature Indus Valley Civilisation, dating to 2600-1900 BCE.
- The site has yielded various stages of Harappan culture and is by far one of the largest Harappan sites in India.
- The site shows the sequential development of the Indus culture in the now dried up Saraswati basin.
- For development of the sites and its environs, repairing of boundary wall, pathways, public amenities, solar lights, benches are being provided.
- Excavation is also proposed at the site to showcase the archaeological remains in a holistic manner. In the union budget of 2020 it was announced that Five iconic archaeological sites located across five states will be developed.
- **One of which is Rakhigarhi located in Hissar district, Haryana.**

Five archaeological sites as "iconic sites" with onsite museums

- Rakhigarhi (Haryana)
- Hastinapur (Uttar Pradesh)
- Sivsagar (Assam)
- Dholavira (Gujarat)

- Adichanallur (Tamil Nadu).

Stories of Madurai

In news

The Ministry of Tourism's Dekho Apna Desh Webinar series held its 82nd webinar titled "Stories of Madurai" on 30th March 2021.

About Madurai

- Madurai, one of the oldest living cities, holds the soul of Tamil Nadu in its magnificent and grand temples that are among the finest and most awe-inspiring specimens of architecture in the country.
- The most spectacular of these is the Meenakshi-Sundareswarar Temple, which is the heartbeat of the city and is visited by thousands of devotees.
- Madurai once traded with ancient Rome and it preserves its distinct character in various arts and textiles that have been bestowed by the Pandian kings (4th century-16th century).
- Madurai grew around the Meenakshi Amman Temple, which was constructed 2,500 years ago by Pandian king, Kulasekhara.
- Popularly called the Athens of the East, it was visited by Greek explorer, Megasthenes in 3rd century BC.
- Other famous travellers who visited this ancient south Indian city included Pliny in 77 AD, Ptolemy in 140 AD, Marco Polo in 1203 AD and Ibn Batuta (1333 AD).

Meenakshi temple

- An excellent example of **Dravidian architecture**, the temple is sprawled over a huge area, bordered by well-laid gardens and pristine fountains.
- One of the halls of the temple is famous as the "Hall of a 1,000 pillars" though only 985 of them exist today. It is said that whichever direction you view these pillars from, they always seem to be in a straight line.
- The highlight of the temple is the outermost corridor that comprises musical pillars.
- These produce different musical notes when tapped. While one of the sanctum, Sundareswarar, is dedicated to Lord Shiva, the other is devoted to Goddess Meenakshi.

Polity & Governance

National Cyber Crime Reporting Portal

Why in news?

Minister of State for Home Affairs, Shri G.Kishan Reddy in a written reply to question in the Lok Sabha stated the data of cases registered on the portal.

National Cyber Crime Reporting Portal

- Government of India taken an initiative to facilitate victims/complainants to report cyber-crime complaints online with a digital platform i.e. National Cyber Crime Reporting Portal.
- All the reported complaints are dealt by respective State/UT police authorities based on the information provided by the complainant for necessary action and should not be treated as an FIR.
- State /UT authorities are responsible for appropriate action on the complaints reported on the portal.

- It came in force on 30th August 2019 to provide a centralized mechanism to the citizens for online reporting of all types of cyber crime incidents, with a special focus on cyber crimes against women and children.

Bodo Peace Accord

Why in news?

The Minister of State gave a written reply in Lok Sabha for Home Affairs.

The Bodo Accord

- It provides political and economic benefits to the tribal areas without seeking a separate Bodoland state or union territory.
- The tripartite agreement has been signed by Assam Chief Minister Sarbananda Sonowal, the leadership of four factions of NDFB, Satyendra Garg, Joint Secretary of ABSU, Ministry of Home Affairs and Kumar Sanjay Krishna, Chief Secretary of Assam.

About Bodoland Territorial Council (BTC)

- Bodoland Territorial Council (BTC) was constituted to look after issues of Bodo tribes like education, horticulture and forests. However, the Government of Assam controls police, general administration and revenue.
- The BTC was established under the 6th Schedule of the Indian Constitution.

LASI Report on Elderly Population

In news

Longitudinal Aging Study of India Wave-1 has collected information on chronic conditions in elderly above 60 years of age

Details

- MoSJ&E formulated national Policy for Older Person (NPOP)-1999 with the goal of ensuring well-being of older persons.
- The Ministry of Health & Family Welfare had launched the "National Programme for the Health Care of Elderly" (NPHCE) during 2010-11 to address various health related problems of elderly people.
- The National Programme for the Health Care for the Elderly (NPHCE) is an articulation of the International and national commitments of the Government as envisaged under the UN Convention on the Rights of Persons with Disabilities (UNCRPD), National Policy on Older Persons (NPOP) adopted by the Government of India in 1999
- The programme is State oriented and basic thrust of the programme is to provide dedicated health care facilities to the senior citizens (>60 year of age) at various level of primary, secondary and tertiary health care.

Objectives

- To provide accessible, affordable, and high-quality long-term, comprehensive and dedicated care services to an Ageing population;
- Creating a new "architecture" for Ageing; to build a framework to create an enabling environment for "a Society for all Ages";
- To promote the concept of *Active and Healthy Ageing*;

- Convergence with National Rural Health Mission, AYUSH and other line departments like Ministry of Social Justice and Empowerment.

NAFED e- Kisan Mandis

In news

NAFED e-Kisan mandis (NeKM) is electronic trading platform with physical infra-structure at each proposed location in partnership with local Farmer Producer Organisations (FPCx and Cooperatives) to be integrated with a National Level Digital Marketing Platform.

Highlights

- The mandi has both physical and virtual infrastructure and it is based on spoke & hub model.
- The physical infra-structure will include digital platform with auctioning facility, pack-house (including sorting-grading, packing and pre-cooling facilities), warehouse and cold storages if required
- The physical infra-structure will include digital platform with auctioning facility, pack-house (including sorting-grading, packing and pre-cooling facilities), warehouse and cold storages if required.
- FPOs will get funding support through Agriculture Infra-structure Fund (AIF) and subsidies available under various Central and State Government schemes. The mandis are made at farm gate bringing buyers to farmers.

Safe City Project

Context

- 'Police' and 'Public order' are State subjects under the Seventh Schedule to the Constitution of India.
- The responsibilities to maintain law and order, protection of life and property of the citizens including crime against women are with the respective State Governments.

In news

As part of several initiatives for safety of women by the Government, Safe City Projects have been sanctioned by the Ministry of Home Affairs under the Nirbhaya Fund scheme in 8 cities.

The Safe City project

- It was drawn up by the Delhi Police in 2013, and received approval from the Union Home Ministry in 2018.
- The cities are Ahmedabad, Bengaluru, Chennai, Delhi, Hyderabad, Kolkata, Lucknow & Mumbai.

The major components of the Safe City project

- Setting up an Integrated Smart Control Room.
- Setting up Pink Out-posts (exclusively administered by Women police) for facilitating ease of filing complaint by women.
- Pink Patrols of Women police.
- Setting up Women Help Desks in all Police Stations with Counsellors.
- Augmentation of existing Asha Jyoti Kendra.
- Implementing Safety measures in buses, including Cameras.
- Improving Street Lighting in identified Hot Spot areas.
- Setting up Pink Toilets.
- Integration of Women power-help line with single Emergency number.

Mission Karmayogi

In news

The Technical digital learning platform of Mission Karmayogi has become functional in pre-production (experimental) stage on which various types of learning courses are being uploaded by the Central and other training institutions

Aim

To prepare Indian civil servants for the future by making them more creative, constructive, imaginative, innovative, proactive, professional, progressive, energetic, enabling, transparent and technology-enabled.

Details

- Ministries and Departments implementing important National flagships programs and projects have been requested to develop '**e-content**' in respect of their programs and projects.
- Empowered with specific role-competencies, a civil servant will be able to ensure efficient service delivery of the highest quality standards.
- An online database will be maintained on what courses they have completed, how did they fare, what areas does their expertise lie in, etc.
- In case of any future vacancy or if an appointing authority is considering an officer, they can simply see what kind of training the officer has been getting.

Data leak

In news

Gurgaon-based mobile payments and digital wallet company MobiKwik on Tuesday said it would get a third-party forensic data security audit done after allegations of a data breach containing the company's users' details resurfaced

Highlights

- Cybersecurity experts claimed that the data of as many as 10 crore MobiKwik users had been leaked and put up for sale on darkweb.
- India does not have a robust mechanism for user data protection and penal actions, if any, in cases of data breaches.
- The Personal Data Protection Bill, which is said to contain provisions dealing with the same has been pending in Lok Sabha since 2019.
- In the absence of the Bill, the Information Technology Act of 2000 and the rules made in 2011 form a regime of data protection

IT Act, 2000

- The Indian Parliament enacted the Information Technology Act, 2000 in 2000. It is the primary law in India for matters related to cybercrime and e-commerce.
- The act was enacted to give legal sanction to electronic commerce and electronic transactions, to enable e-governance, and also to prevent cybercrime.
- Under this law, for any crime involving a computer or a network located in India, foreign nationals can also be charged.
- The law prescribes penalties for various cybercrimes and fraud through digital/electronic format.
- It also gives legal recognition to digital signatures.

- The IT Act also amended certain provisions of the Indian Penal Code (IPC), the Banker's Book Evidence Act, 1891, the Indian Evidence Act, 1872 and the Reserve Bank of India Act, 1934 to modify these laws to make them compliant with new digital technologies.

Economy

India Telecom 2021

In news

TEPC (Telecom Equipment Export Promotion Council) has organized India Telecom 2021' - an Exclusive International Business Expo being held virtually on March 3 & 4, 2021

Highlights

- Potential buyers are attending the event from countries across the globe.
- More than 1,000 delegates, out of which more than 200 are foreign delegates from more than 45 countries, are attending India Telecom 2021.
- More than 40 Indian telecom companies are showcasing their state of the art products and capabilities at the exhibition which is organized by TEPC as a part of this event.
- Indian IT and telecom products are of world-class quality and are globally competitive in technology and price.
- "The government has announced the Production Linked Incentive (PLI) schemes for various sectors, including telecom sector, to become a part of the global supply chain.

Significance

- This event is of great significance to Indian exporters and has a very high impact. India is a fast-growing telecom market fueled by data growth.
- This local demand is a driver of domestic telecom companies to create innovative, high-quality products and solutions that can serve the needs of both India and emerging markets across the globe.
- In addition to offering state of the art telecom products and services, Indian companies are open to partner and provide skill development and training to our overseas buyers.

About TEPC

- The Ministry of Commerce & Industry and Ministry of Communications, Government of India to promote and develop of Export of Telecom Equipment and Services have set up TEPC.
- The council undertakes several activities aimed at exports promotion such as Commissioning of Studies to find potential markets, holding of National/International Seminars and facilitating participation of exporters in various overseas exhibitions.
- The council also disseminates trade related data to its members.
- The council makes various recommendations to the Government for making necessary changes in various policies and procedures for promotion of Exports and Services.

Red rice export from Assam to the USA

In news

In a major boost to India's rice exports potential, the first consignment of 'red rice' was flagged off to the USA

Government role

- The government had set up the Rice Export Promotion Forum (REPF), under the aegis of the APEDA.
- REPF has representations from rice industry, exporters, officials from APEDA, ministry of commerce and directors of agriculture from major rice producing states including West Bengal, Uttar Pradesh, Punjab, Haryana, Telangana, Andhra Pradesh, Assam, Chhattisgarh and Odisha.

Data

- During the April – January period of 2020-21, the shipment of non-Basmati rice witnessed an impressive spike.
- The non-basmati rice exports was Rs 26,058 crore (3506 US\$ Million) during April-January, 2021 against Rs 11,543 crore (1627US\$ Million) reported during April-January, 2020 period.
- The exports of non-Basmati witnessed a growth of 125 % in Rupee term and 115 % Dollar terms.
- The sharp spike in rice exports especially during a phase where globally the COVID19 pandemic has disrupted supply changes many commodities, has been attributed to the government taking prompt measures to ensure exports of rice while taking all the COVID19 related safety precautions.

CSIR Floriculture Mission

In news

Dr Harsh Vardhan exhorts scientists of CSIR laboratories across the country to develop models at each laboratory under the “CSIR Floriculture Mission”.

Floriculture

- Floriculture can give 5 times more return than the traditional crops to farmers besides having potential to provide employment to a large number of people.
- Floriculture has the potential to provide employment to a large number of people through nursery raising, floriculture farming, entrepreneurship development for nursery trade, value addition and export.
- CSIR has been developing new floral varieties and several value addition technologies.
- Through Floriculture Mission of CSIR, agro-technologies, new varieties and value addition technologies available with the CSIR institutions, efforts are being made to take these to farmers and entrepreneurs, and help them in multiplying their income”.

Focus

- The mission will focus on commercial floral crops, seasonal/annual crops, wild ornaments and cultivation of flower crops for honey bee rearing.
- Some of the popular crops include Gladiolus, Canna, Carnation, Chrysanthemum, Gerbera, Lilium, Marigold, Rose, Tuberose etc.

Significance

- The CSIR Floriculture Mission is expected to create opportunity for entrepreneurship development in floriculture.
- Infusion of latest technologies in the field of floriculture can be successfully led by CSIR.

GI Mahotsav

In news

Shri Arjun Munda inaugurates GI Mahotsav at Lal Bahadur Shastri National Academy of Administration, Mussoorie

Purpose

- The purpose of the GI Mahotsav is to increase the awareness of these products amongst the Officer-Trainees and sensitize them about the rich cultural heritage of India so that they can in-turn formulate policies that safeguard the interest of GI products in their region.
- Such an event will also provide more marketing opportunities to the registered producers or manufacturers.
- These interactions at such events, these officer trainees will gain invaluable insights into real challenges and be more sensitive when they start working in their respective states.

GI

- Geographical Indication or GI tagging has acquired even more of an importance over the past few years.
- Registering a geographical indication and seek protection for specific products produced in a particular geographical region encourages the growers & artisans and motivates the marketers to expand their business both nationally & internationally.
- Some of the Make in India products include the world-famous Darjeeling tea, Mysore silk, Chanderi saree, Banarasi brocades, Pochampally, varieties of spices, Orissa Patchitra, Worli painting, Araku valley coffee, Kullu shawls, Jaipur blue pottery, Naga Mircha (also known as bhut jolokia) and many more.

Cultivation and processing of aromatic plants doubles incomes of farmers

In news

Cultivation of aromatic plants has given them additional income

How?

They have extracted essential oil from the improved variety of wild marigold (*Tagetes minuta*) that has been introduced, and the profit from wild marigold oil has doubled the income of farmers as compared to traditional maize, wheat and paddy crops.

Support

- The improvement in the fortune of the farmers has been brought about through interventions made by **Society for Technology and Development (STD), Mandi Core Support group, SEED Division, DST**.
- STD initiated cultivation and processing of aromatic plants (wild marigold, improved variety of IHBT) involving the farming community in technical collaboration with **IHBT-CSIR, Palampur**, in Parwai village, Bhatiyat Block in Chamba, an Aspirational District.
- A self-help group (SHG) consisting of 40 farmers called Green Valley Kissan Sabha Parwai has been formed and linked to Himachal Gramin Bank, Parchhod, for further financial help.
- A distillation unit of 250 kg capacity was installed at Parwai village and farmers trained into agro-technology of wild marigold, extraction of oil, packing, and storage of oil started cultivating wild marigold and distilling oil from it.
- The extracted oil is being sold at Rs. 9500/kg and used in preparing perfumes and essences by pharmaceutical industries.
- **The income of farmers which was around Rs. 40,000-50,000 per hectare from traditional crops have increased to about Rs. 1,00,000 per hectare by cultivation and extraction of wild marigold oil.**

Another initiative

Farmers have improved pollination by adopting mud hive beekeeping technology which has enhanced apple production resulting in an increase in the income of apple growers 1.25 times.

Mud Hive Technology

- It is a combination of wall hive & wooden hive technology, with a habitat like wall hive.
- It has inbuilt provision for putting frames inside the mud hive and more favorable conditions, especially temperature for bees throughout the year as compared to wooden hives.
- The technology has brought about better colony growth & less swarming as compared to earlier used wooden boxes because of the favourable conditions they created.
- Introduction of indigenous bees, which can survive better in the apple growing areas, to replace the Italian bees through this technology has helped increase the average productivity of apple orchards by around 25 percent.
- In existing mud hives, provisions for easy cleaning inside mud hive were introduced by putting aluminium sheets at the base of mud hive.
- This sheet is sealed with cow dung paste and can be removed for cleaning without opening the mud hive.
- The rooftop of mud hive was also made up of stone slate, which gives better protection and maintains favourable temperature inside mud hive.
- The technology has also helped in the extraction of honey in hygienic manner using honey extractors as in wooden boxes and introduced better management practices, such as feeding, inspection, union, and division of colonies as compared to traditional wall hives.

Van Dhan Vikas Kendras

In news

A total of 1770 Van Dhan Vikas Kendras (VDVKs) have so far been sanctioned in 22 States & one Union Territory

Highlights

- It is done for promotion of tribal entrepreneurship and livelihood generations wherein a total of about 5.27 Lakhs beneficiaries have been associated.
- It is envisaged to scale up implementation of the program in 26 States and 308 Districts including 39 aspirational districts where significant forest dwelling tribal population and rich source of Minor Forest Produce.
- Further it is envisaged to explore opportunities to forge convergence with other central line Ministries to boost the initiative.

The Van Dhan Scheme

- It is an initiative of the Ministry of Tribal Affairs and TRIFED.
- It was launched on 14th April, 2018 and seeks to improve tribal incomes through value addition of tribal products.
- It is a component of the 'Mechanism for Marketing of Minor Forest Produce (MFP) through Minimum Support Price (MSP) & Development of Value Chain for MFP' was launched on 14th April, 2018.
- Implemented by TRIFED as the nodal agency at the national level, the Van Dhan start ups is a well thought master plan for the socio-economic development of the tribal population of the country.

Production Linked Incentive Scheme

In news

Keeping in view India's vision of becoming 'Atmanirbhar' and to enhance India's Manufacturing Capabilities and Exports, an outlay of INR 1.97 lakh crore has been announced

What is the PLI Scheme?

- Production-Linked Incentive or PLI scheme is a scheme that aims to give companies incentives on incremental sales from products manufactured in domestic units.
- The scheme invites foreign companies to set up units in India, however, it also aims to encourage local companies to set up or expand existing manufacturing units and also to generate more employment and cut down the country's reliance on imports from other countries

Purpose

- To protect identified product areas
- To introduce non-tariff measures that make imports more expensive.
- To acknowledge the relevance of exports in overall growth strategy but focus more on the domestic market
- To promote manufacturing at home by offering production incentives and encourage investments both from within and outside.

PLI schemes for 13 key sectors

- Mobile Manufacturing and Specified Electronic Components,
- Critical Key Starting materials/Drug Intermediaries & Active Pharmaceutical Ingredients,
- Manufacturing of Medical Devices
- Automobiles and Auto Components
- Pharmaceuticals Drugs
- Specialty Steel
- Telecom & Networking Products
- Electronic/Technology Products
- White Goods (ACs and LEDs)
- Food Products
- Textile Products: MMF segment and technical textiles
- High efficiency solar PV modules, and
- Advanced Chemistry Cell (ACC) Battery.

Highlights

- The PLI schemes will be implemented by the concerned Ministries/ Departments and will be within the overall financial limits prescribed.
- The PLI Schemes are expected to enable the setting up of a widespread supplier base for the global champions established under the scheme.
- It will help bring scale and size in key sectors and create and nurture global champions. All the units put together would help India to generate massive primary and secondary employment opportunities.

Atmanirbhar Niveshak Mitra

In news

In order to further strengthen efforts to promote domestic investments, the Department for Promotion of Industry and Internal Trade (DPIIT) is in the process of finalising a dedicated digital portal "Atmanirbhar Niveshak Mitra"

Details

- The portal is in the testing phase and will be launched by May 1, 2021.
- The ministry is also working on webpage that will be available in regional languages and mobile app.
- It is being done for handholding and facilitation, information dissemination, and facilitation of domestic investors.

- The portal is in testing phase and the final version will be ready for launch by 15th May 2021. The webpage will also be available in regional languages and mobile App in due course.
- The portal will have a dedicated digital investment promotion and facilitation team at Invest India, which will facilitate domestic investors to directly connect or request meetings with the Invest India experts, and discuss their specific investment/ doing business related matters.
- It will digitally support investors throughout their doing business journey in India and help them getting all the information starting from finding an investment opportunity to exploring incentives & taxes applicable to their businesses, information and assistance for doing business in India, sources of funding, information on raw material availability, training, management requirement and tender information.
- This is one of the most significant digital initiative being undertaken to target the specific investor interests and ensure swift clearances & approvals throughout their doing business journey.
- This Project is under the “Invest India” agency which was set up in 2009 as a non-profit venture under the Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, Government of India.

Ease of doing business reforms

In news

The number of States who have successfully completed the “**Ease of Doing Business**” reforms has reached to twenty

Details

- Five more States namely, Arunachal Pradesh, Chhattisgarh, Goa, Meghalaya and Tripura have completed the “Ease of Doing Business”
- States completing Ease of Doing Business reforms are eligible for additional borrowing of 0.25 percent of Gross State Domestic Product (GSDP)
- The ease of doing business is an important indicator of the investment friendly business climate in the country.
- Improvements in the ease of doing business will enable faster future growth of the state economy.

Reforms

- Completion of first assessment of ‘District Level Business Reform Action Plan’
- Elimination of the requirements of renewal of registration certificates/approvals/licences obtained by businesses under various Acts.
- Implementation of computerized central random inspection system under the Acts wherein allocation of inspectors is done centrally, the same inspector is not assigned to the same unit in subsequent years, prior inspection notice is provided to the business owner, and inspection report is uploaded within 48 hours of inspection.

Chhatrasal Convention Centre

In news

In order to promote India as MICE Destination (Meetings, Incentives, Conferences and Exhibitions), Ministry of Tourism, Government of India in association with Madhya Pradesh Tourism and India Convention Promotion Bureau are organizing this ‘MICE Roadshow – Meet in India’ at the heart of Incredible India from 25-27 March 2021 at Chhatrasal Convention Centre, Khajuraho.

Details

- This event will be an effort under Aatmanirbhar Bharat, realizing India’s MICE potential.

- The roadshow will be an opportunity to focus on the Government's initiatives in developing India as a MICE destination with infrastructure and an eco-system pan-India that will favourably place India amongst the global competitors.
- On this occasion, the Ministry of Tourism plans to launch its campaign "Meet in India" from Khajuraho, which is one of the identified iconic tourist destinations of the country.
- Recognizing India's huge potential as a MICE destination, 'Meet in India' will be the distinct sub-brand under 'Incredible India' to promote the country as a MICE destination.
- The event will also deliberate the draft Master Plan being prepared by the Ministry of Tourism to develop Khajuraho as an Iconic Destination.
- A number of hard and soft interventions are proposed to develop Khajuraho.
- The event will provide a tremendous boost to Khajuraho as an iconic tourist destination particularly the MICE potential of Khajuraho and show the way for other cities to consider.
- The Ministry of Tourism has framed 'Development of Iconic Tourist Destinations Scheme' a Central Sector Scheme for development of nineteen identified iconic destinations in the country following a holistic approach.

Science & Tech

Made in India spectrograph

In news

Indian Scientists have indigenously designed and developed a low-cost optical spectrograph

Highlights

- It can locate sources of faint light from distant quasars and galaxies in a very young universe, regions around supermassive black-holes around the galaxies, and cosmic explosions.
- Such spectroscopes were so far imported from abroad involved high costs.
- The 'Made in India' optical spectrograph named as **Aries-Devasthal Faint Object Spectrograph & Camera (ADFOSC)**, indigenously designed and developed by **Aryabhata Research Institute of observational sciences (ARIES), Nainital**
- It is about 2.5 times less costly compared to the imported ones and can locate sources of light with a photon-rate as low as about 1 photon per second.
- The spectroscope, the largest of its kind among the existing astronomical spectrographs in the country, has been successfully commissioned on the **3.6-m Devasthal Optical Telescope (DOT)**, the largest in the country and in Asia, near Nainital Uttarakhand.

Application

The spectrograph is presently being used by astronomers from India and abroad to study distant quasars and galaxies in a very young universe, regions around supermassive black-holes around the galaxies, cosmic explosions like supernovae and highly energetic Gamma-ray bursts, young and massive stars, and faint dwarf galaxies.

What is a Spectrograph

- A spectrograph is a device that separates a signal into its component wavelengths.
- The easiest way to picture this is thinking about a prism splitting white light into colors.
- Prism is a type of spectrograph. Specifically, prisms work through dispersion.

- With the wavelengths dispersed, they can be measured as a spectrum by the detector instead of as one beam.
- Most spectrographs don't use prisms, however. They use diffraction gratings, which are more efficient.

Global Bio-India 2021

In news

Recently, the Union Minister for Health & Family Welfare inaugurated the second edition of Global Bio-India-2021 in New Delhi through virtual mode.

Aim

- Global-Bio India aims at facilitating the recognition of India as an emerging Innovation Hub and the bio-manufacturing hub globally.
- The event will facilitate India's investments, Biotech innovation ecosystem, Make in India for Atmanirbhar Bharat, global networking, and collaborations.

Highlights

- The event has representatives from 50 plus countries with Switzerland as the key partner Karnataka as the state partner.
- The event witnessed participation of 5000 plus delegates, 200 plus exhibitors, and 1000 plus start-ups.
- It also witnessed representation from researchers, academia, start-ups, entrepreneurs, investors, policy leaders, regulators, enablers, medium and large-scale industry, organizations for facilitating the acceleration of the innovation ecosystem in India.
- 24 knowledge sessions in order to emphasize the role of multiple allied sectors in the growth of Biotechnology in India was held in 3 days.

Detecting the effect of prolonged alcohol exposure on RBC

In news

Scientists have custom-made a platform to detect the effect of prolonged alcohol exposure on Red Blood Cells (RBC) through high-resolution measurements of their size

Details

- The high-resolution platform that shows the reduction in size of RBCs on alcohol exposure can be tuned for a point-of-care screening of multiple conditions that alter the size and count of RBCs in blood.
- It is known that alcohol affects RBCs, the exact physiological changes are very subtle and difficult to measure.
- The device made in RRI relies on the resistive pulse sensing principle.
- The team first developed techniques for making tiny micron (1/1000th of a millimetre) sized holes or micro-pores at the tip of a glass capillary with careful fabrication, flame polishing, and image verification

Functioning

- Cells passing through the pore created very tiny electrical pulses, which give direct and most sensitive information of cell count and volume.

- These results may also be used to explain the lack of oxygen-carrying capability of RBC under alcohol exposure leading to blurred vision, muscular in coordination, and altered mental states from alcohol abuse.

Anti Microbial Resistance Crisis

In news

DRDO has achieved an important milestone in the development of Air Independent Propulsion (AIP) System by proving the land-based prototype on 8 March 2021

Highlights

- The plant was operated in endurance mode and max power mode as per the user requirements.
- Naval Materials Research Laboratory (NMRL) of DRDO is developing the system.
- AIP has a force multiplier effect on lethality of a diesel electric submarine as it enhances the submerged endurance of the boat, several folds.
- Fuel cell-based AIP has merits in performance compared to other technologies.
- There are different types of AIP systems being pursued internationally, fuel cell-based AIP of NMRL is unique as the hydrogen is generated onboard.
- The technology has been successfully developed with the support of industry partners L&T and Thermax.
- It has now reached the stage of maturity for fitment into target vessels.

Science and Engineering Board (SERB)

In news

The portal called 'SERB – Project Information System & Management (SERB – PRISM)' developed by SERB, a Statutory body of the Department of Science and Technology (DST), was launched

Details

- A comprehensive gateway of real-time STI information and knowledge can now forge a strong scientist-scientist, and science-society connect.
- A portal that can help retrieve real-time information about research support provided by the **Science and Engineering Board (SERB)**, the premier agency for planning, promoting, and funding of internationally competitive research in emerging areas, has been developed.
- SERB-PRISM provides a platform which makes project details, research outcomes, facilities created, and their achievements originating from SERB funding accessible while allowing researchers to look at research trends, learn about cutting-edge science, locate critical equipment in their vicinity and help seek collaborations across disciplines.

Application

- This portal is designed to provide information regarding projects sanctioned by SERB from 2011 onwards, including funding details, status, research summary, and project output information such as publications and patents.
- Search facilities enables retrieval of information about projects by Name of PI, institution, state, keywords, as well as year-wise listing and equipment that has been sanctioned by SERB in these projects.

SERB

Vision

To position science and technology as the fulcrum for social and economic change by supporting relevant, competitive and quality scientific research and development.

Mission

As the premier national research funding agency, raise the quality and footprint of Indian science and engineering to the highest global levels in an accelerated mode, through calibrated support for research and development.

Exoplanets

In news

Researchers from the Indian Institute of Astrophysics (IIA) and Tata Institute of Fundamental Research, investigated the host star properties for the directly imaged exo-planets to understand various formation scenarios for these wide orbit celestial objects.

Details

- With more than 4300 planets discovered till date, it has become essential to characterize the exo-planets in terms of their various properties.
- Far away from our little home in the solar system, planets called exo-planets orbit stars similar to the Sun, forming their own stellar system.
- Scientists studying exo-planets found that while a metal-rich environment of host stars is vital for the formation of Jupiter-type light, but giant planets; it is not necessary for the long orbit heavy giant planets.
- This study which explores connections between the planet and host star properties, can help in understanding how planets form and evolve at large orbital distances.
- This finding seems consistent with an existing model called the core accretion model of planet formation.
- For planet mass greater than mass of Jupiter, the large scatter in metallicity distribution suggests that metallicity might not play a significant role in the formation of these celestial objects.
- This means there is no single dominating mechanism for planet formation at wider orbits. Planets in remote orbits could form either by core accretion process or by gravitational instability.

Significance

Correlation between star and planet properties can provide vital clues about the possible formation and evolution scenarios. Stars are largely made of Hydrogen and Helium with a small fraction of other elements.

Exoplanet

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Deep Ocean Mission

In news

The Deep Ocean Mission is proposed as multi-ministerial multi-disciplinary programme with emphasis on development of deep sea technology, exploration of deep sea mineral resources and biodiversity, acquisition of a research vessel for exploration, deep sea observations, and capacity building.

Objective

- Development of technologies for deep sea mining, underwater vehicles and underwater robotics.

- Development of ocean climate change advisory services.
- Technological innovations for exploration and conservation of deepsea biodiversity.
- Deep ocean survey and exploration.
- Proof of concept studies on energy and freshwater from the ocean.
- Establishing advanced marine station for ocean biology.

Details

- It is proposed to collaborate with non-governmental organizations for research collaboration for various components of Deep Ocean Mission.
- Under Deep Ocean Mission, it is proposed to develop, test and demonstrate the mining technology for harvesting of polymetallic nodules from the Test Mine Site (TMS) in the allocated area of 75000 sq. km in the Central Indian Ocean Basin (CIOB).
- A manned submersible for 6000 m depth is also proposed to be developed as an ocean exploratory tool.

Automatic Weather Stations in North-Eastern States

In news

India Meteorological Department (IMD) has installed modern Automatic Weather Stations (AWS) in North Eastern States of India

Details

- In order to enhance the Weather & Climate services of the NE region, **an activity namely, 'Integrated Meteorological Services for the North-East (NE) region'** has been initiated by the Ministry of Earth Sciences (MoES) under the Central Sector scheme Atmosphere & Climate
- Research-Modeling Observing Systems & Services (ACROSS).
- Under the activity, entire observational network in the NE region will be augmented to improve the weather & forecasting skills over the region by commissioning of state of art systems like 8 X-Band Doppler Weather Radars, GPS sonde systems, Snow Gauges, and augmentation of Automatic
- Weather Stations, Automatic Rain Gauges etc.
- This will include setting of observational network required for meeting aviation & other requirements through commissioning of Automated Weather Observing System/Heliport Automated Weather Observing System (AWOS/HAWOS), setting up/upgradation of Meteorological Centres (MCs) and other facilities over the region.

Significance

Augmentation of the observational network will help fill the data gap areas in the region, leading to better accuracy of forecasts and consequent precision in Climate monitoring, analysis and climate prediction.

Automatic Weather Stations

- An Automatic Weather Station (AWS) is defined as a facility that automatically transmits or records observations obtained from measuring instruments.
- In an AWS, the measurements of meteorological elements are converted into electrical signals through sensors.
- The signals are then processed and transformed into meteorological data.
- The resulting information is finally transmitted the by wire or radio or automatically stored it on a recording medium.

Technology for Forecasting of Floods

In news

Forecasting and prevention of floods are the responsibilities of the Central Water Commission (CWC), Ministry of Water Resources

Details

- India Meteorological Department (IMD) supports flood warning services of Central Water Commission (CWC) by providing observed and predicted rainfall.
- CWC issues flood forecasts as a non-structural measure of flood management, to concerned State Governments depending on the requisition from them at identified locations.
- CWC also issues inflow forecasts to identified reservoirs for proper reservoir regulation.
- In order to meet specific requirements of flood warnings by CWC, India Meteorological Department (IMD) operates Flood Meteorological Offices (FMOs) at 13 locations viz. **Agra, Ahmedabad, Asansol, Bhubaneswar, Guwahati, Hyderabad, Jalpaiguri, Lucknow, New Delhi, Patna, Srinagar, Bengaluru and Chennai.**

Flood forecast formulation methodology used by CWC

Conventional statistical correlation methodology

- It includes gauge to gauge correlation between base station (upstream of forecasting station) and forecasting station.
- This method provides advance warning time from 6 to 24 hrs depending upon the terrain.

Rainfall-Runoff mathematical modeling technology

- It includes mathematical modeling of river basin based on rainfall runoff methodology.
- Input taken is rainfall provided by IMD through its Automatic Weather Station (AWS) & Automatic Rain Gauge (ARG) stations and CWC telemetry stations.
- The three days advance forecast is generated using various available rainfall data products as a major input into the system like IMD Gridded Rainfall product and other global rainfall products such as GSMaP (Global Satellite Mapping of Precipitation), GPM (Global Precipitation Measurement) and the IMD forecasted rainfall data (WRF- Weather Research and Forecast, GFS- Global Forecast System).

Modernization of dissemination of flood forecasts

- Dissemination of flood forecasts have been modernised by having a dedicated website.
- The flood information is also shared via various social media platforms of CWC Flood Forecast dissemination system.
- Daily Flood Situation Report cum Advisories are also shared with all stake holders as well as general public.

Technology Used

Flood Forecasting by CWC uses all the latest technology including remote-sensing, Geographical Information System (GIS), Internet, Artificial Intelligence and Machine Learning in development/ running/ formulation and calibration of Mathematical models and for providing Inundation Alerts which are closely at par with international standards.

Indian Collaborative Research in Antarctica

In news

India collaborates with Norway and Japan in Antarctic Research

Details

- A major Indo-Norwegian collaborative field campaign, near Indian Maitri station, was undertaken during 2016–2019
- This campaign was undertaken to understand the ice shelf dynamics, mass balance and reconstruct past changes in atmospheric and sea ice dynamics under the joint project “Mass balance, dynamics, and climate of the central Dronning Maud Land coast, East Antarctica (MADICE)”. Under this project, geophysical field measurements, ice core drilling, snow core drilling, ice-sheet modelling and satellite remote sensing-based studies were conducted to understand the future Antarctic contribution to the global sea-level rise.
- An Indo-Japanese project “Schirmacher Oasis Nippon (Japan) India Coring (SONIC)” was initiated during 2019 to reconstruct the past-climate.
- 15 sediment cores, ranging from 1 m to 8 m, were retrieved from various lakes of Schirmacher Oasis by the team for analysis.

New state of the materials

In news

Scientists have discovered a new exotic, strange state of materials in contact with an environment that alters its physical properties in the presence of an electromagnetic field, leading to better quantum technologies, which are tunable and controllable as per the user requirements

The study

- They have shown that, in an external electromagnetic field, geometric properties of a crystalline solid with lattices arranged in a one-dimensional periodic manner can display phase transitions, thereby altering its physical properties.
- **The 2016 Nobel Prize for physics was awarded to the theoretical discoveries of topological phase transitions and topological phases of matter, which have played a significant role in the modern understanding of materials and their applications.**
- Topology is concerned with the properties of a geometric object preserved under continuous deformations, such as stretching and twisting.
- Understanding various phases and phase transitions is of central importance in the study of matter. Generally, phase transitions are studied by assuming that the system is isolated, with little or negligible environmental interactions.
- They explored ways to control the topological phase transitions of matter in contact with an environment by an external periodic perturbation such as laser light in their present work.
- While studying the geometric phase in systems in contact with an environment and examining the environment's consequence on the band-structure topology of the systems, they discovered a new metallic state of the materials coupled to an environment.

Molecular sensor for identifying new cancer drugs

Context

Understanding tubulin modifications has remained a challenge till date because of unavailability of tools that can mark them in living cells

In news

Researchers have recently developed a molecular sensor, which can identify cancer drugs by detecting how such chemicals modify microtubules inside living cells

Issue

Researchers from inStem, Bangalore, India, in collaboration with Curie Institute, Orsay, France, funded by Indo-French Centre decided to overcome this shortcoming and developed the first tubulin nanobody - or sensor to study the dynamics of microtubule modifications in living cells and use this for identification of new cancer therapeutic drugs.

Finding of the research

- The researchers from Bangalore and Orsay devised a method to design synthetic proteins, known as nanobodies, which can bind specifically to modified microtubules.
- These nanobodies are similar to antibodies made in our body as a defense mechanism against pathogens.
- However, unlike antibodies, the nanobodies are smaller in size and easily amenable for protein engineering.
- The nanobody was then coupled with a fluorescent molecule to serve as a detection tool, called sensor. They developed and validated a live cell sensor against a unique microtubule modification called tyrosinated form of microtubules that is already known to be important for cell division and intracellular organization.
- The tyrosination sensor is the first tubulin nanobody - or sensor - that can be used to study the dynamics of microtubule modifications in living cells
- CEFIPRA researchers have shown the application of this sensor in studying the effect of small-molecule compounds that target microtubules.
- These chemicals are frequently used as anti-cancer drugs.
- Thus, the tyrosination sensor will facilitate studying microtubule functions for many researchers and will aid identifying new drugs of therapeutic value.

Sensors capable of monitoring biomarkers from sweat

In news

Government of India, has introduced a flexible low cost, wearable sensor that can track sweat for monitoring the health and physiological status of the human body

Highlights

- It can obviate the necessity of blood and other invasive tests.
- The wearable microfluidic sensor, which does not need a clean room, can be used for in situ monitoring of biomarkers such as lactate, Sodium (Na^+), Potassium (K^+), and Alkaline/acidic nature (pH) simultaneously from sweat samples.
- The sensor can analyse biomarkers from human sweat during exercise activities without transfer of signals.
- The high-throughput sweat sampling ability of the sensor facilitates continuous capture and transport of sweat over the surface of the device resulting in real-time analysis.
- The flexible sensor can be attached on the irregular skin surface and monitors the dynamic biomarker levels, and are important for clinical diagnosis and personalized point-of-care analysis.
- Developing microfluidic sensors with rapid sweat sampling and multiplexed electrochemical recognition abilities are extremely important for accurate sweat biomarker analyses and continuous real-time monitoring of health.

Possible origin of winds from black hole

In news

Scientists have tracked the generation of this wind and how the disc of diffused swirling materials around the black hole called an accretion disc drives it

How?

- As gas and dust fall toward a black hole, they form a disk around it.
- As material piles up in the disk, it heats up to temperatures in excess of millions of degrees.
- A fraction of this infalling matter is ejected in the form of winds.

Theoretical concept

- By blowing dense gas from the galactic nucleus and by halting inward flows from the galactic halo, the winds play a vital role in shaping the evolution of the black hole host galaxy.
- Hence the mechanism of generation of these winds and what drives them has intrigued scientists for a long as it helps them explore host galaxies.
- The scientists tried to figure out whether driving of the wind by radiation flux can dominate the radiation drag effect a motion resisting effect which is similar to the resistance offered by air to a moving stone or to a descending parachute.
- This effect is produced when radiation penetrates a moving medium and is proportional to radiation energy density, various components of radiation pressure, and the velocity components of the wind.
- The authors showed that luminous discs can produce winds up to speeds which is about ten percent of the speed of light, and also that these winds originated from regions close to the central black hole.
- Radiation drag plays a key role in reducing the speed of light. For less bright discs, radiation drag quenches the wind completely.

Multifunctional heat sinks

In news

Indian Scientists have developed a multifunctional heat sink enabled by 3D printing

Applications

- It can dissipate heat from mechanical devices at 50 percent enhanced rate compared to conventional sinks.
- The technology enabled by 3D printing in combination with electroplating was developed to withstand load while dissipating heat.
- The technology is lightweight and can bear mechanical compressional loads, dissipate heat and absorb sound/noise.
- It can be used in the electronics cooling, electronics as well as power/cooling industry.
- Any fan-mounted heat exchanger can benefit from this development.
- The technology is in third stage of Technology readiness levels (verification with experimental to verify that the concept works as expected)

Heat Sink

- A heat sink is a component that increases the heat flow away from a hot device. It accomplishes this task by increasing the device's working surface area and the amount of low-temperature fluid that moves across its enlarged surface area.
- Based on each device's configuration, we find a multitude of heat sink aesthetics, design, and ultimate capabilities.

High Electron Mobility Transistor

Context

Power electronic systems demand high blocking voltage in OFF-state and high current in ON-state for efficient switching performance.

In news

Scientists from Bangalore have developed a highly reliable, High Electron Mobility Transistor (HEMTs)

Details

- It is a normally OFF device, can switch currents up to 4A, and operates at 600V.
- It is in the OFF state by default and works like any other commonly used power transistor.
- Such transistors are called e-mode or enhancement mode transistors.
- This first-ever indigenous HEMT device made from gallium nitride (GaN) is useful in electric cars, locomotives, power transmission and other areas requiring high voltage and high-frequency switching would reduce the cost of importing such stable and efficient transistors required in power electronics.
- HEMTs made of aluminium gallium nitride/ gallium nitride (AlGaN/GaN) provides an edge over silicon-based transistors as they allow the systems to operate at very high voltages, switch ON and OFF faster, and occupy less space.

Artificial photosynthesis

In news

Scientists have found a method to mimic nature's own process of reducing carbon dioxide in the atmosphere, namely photosynthesis

Functioning

- It will capture excess carbon dioxide in the atmosphere.
- This artificial photosynthesis (AP) harnesses solar energy and converts the captured carbon dioxide to carbon monoxide (CO), which can be used as a fuel for internal combustion engines.
- In artificial photosynthesis (AP), scientists are essentially conducting the same fundamental process in natural photosynthesis but with simpler nanostructures.

Highlights

- The scientists have immobilized a photosensitizer, which is a chemical called ruthenium bipyridyl complex ($[\text{Ru}(\text{bpy})_2\text{Cl}_2]$) and a catalytic part which is another chemical called rhenium carbonyl complex ($[\text{Re}(\text{CO})_5\text{Cl}]$), inside the nanospace of metal-organic framework for artificial photosynthesis.
- Both these molecular entities stay in close proximity in the confined nano-space of a porous metal-organic framework system resulting in excellent CO_2 uptake capability at room temperature. This synthetic strategy empowers efficient solar light-driven photocatalysis.
- The developed catalyst exhibited excellent visible-light-driven CO_2 reduction to CO with more than 99% selectivity.
- The catalyst also oxidizes water to produce oxygen (O_2).
- The photocatalytic assembly, when assessed for CO_2 reduction under direct sunlight in a water medium without any additives, showed superior performance of CO production.
- Being heterogeneous, the integrated catalytic assembly can be reused for several catalytic cycles without losing its activity.

SERB Women Excellence Award

In news

Dr. Sonu Gandhi, a Scientist at the National Institute of Animal Biotechnology (NIAB), Hyderabad, has been awarded the prestigious SERB Women Excellence Award

Highlights

- She has recently developed a smart nanodevice for the detection of Rheumatoid arthritis (RA), cardiovascular disease (CVD), and Japanese encephalitis (JE).
- The smart nanodevice developed by her group helped in detection of the biomarkers of the diseases using graphene functionalised with amine and conjugated with specific antibodies.
- The developed sensor offers several key advantages, such as ultra-high sensitivity, ease of operation, and a short response time, that can be easily integrated into a chip for point-of-care testing.
- The developed sensor exhibited a clear advantage over conventional techniques, and it is highly sensitive.
- They can improve early diagnosis of the diseases, ensuring prompt, more effective, and less expensive treatment.

Major work

- Her work is based on understanding the mechanism of interaction between nanomaterials and biomolecules on the surface of devices called transducers that receive energy from one system and transmit it for the development of a new generation of biosensors for clinical diagnosis of bacterial and viral disease, veterinary and agricultural applications, food analysis and environmental monitoring.
- Dr. Sonu's lab has developed electrochemical as well as a microfluidic-based nanosensor for detection of pesticides used primarily to control foliage and soil-borne insect pests in Fruits and Vegetables.
- In a parallel study, her lab has developed ultrafast sensing of a biomarker of cancer.
- The developed cancer biosensor called urokinase plasminogen activator receptor (uPAR) may be used as a quantitative tool, making it a tenable alternate for the detection of uPAR in cancer patients.

About the award

SERB Women Excellence Award is a one-time award given to women scientists below 40 years of age and who have received recognition from any one or more of the following national academies such as Young Scientist Medal, Young Associate etc.

Use of Satellite for crop Health Estimation

Context

- Being able to predict crop yields accurately allows governments to plan the production, distribution, and consumption of food more effectively, combat food insecurity, and prepare for shortages and supply shocks well in advance.
- The Dr. P K Mishra Committee was constituted in September, 2013 to review the implementation of crop insurance schemes in India.
- The Committee submitted its report in May, 2014 recommending the use of satellite remote sensing data for various applications related to yield and crop health estimation for crop insurance.

Several activities using satellite

- Use of satellite remote sensing derived yield values for smart sampling and optimization of Crop Cutting Experiments (CCEs) being conducted under Pradhan Mantri Fasal Bima Yojana (PMFBY).

- Use of satellite remote sensing to assess the discrepancy between the actual sown area and the insurance area and compute the Areas Correction Factor (ACF).
- Use of satellite imagery for resolving disputes between the State Governments and Insurance Companies related to crop yield estimates.
- Yield data quality checking using remote sensing.
- Qualitative crop loss and health assessment using satellite remote sensing.
- Use of satellite remote sensing for assessing the areas of preventive sowing or failure of crop emergence.
- Use of long-term satellite remote data for risk assessment which have been used for clustering of districts.

Space-based remote sensing policies

In news

Liberalised geospatial policy & space-based remote sensing policies to do wonders for country

Highlights

- According to the Spacecom policy draft, which will replace the existing Satcom Policy, the private Indian firms will be allowed to set up control centres outside India and use overseas space assets.
- According to the prepared draft, the private firms will be able to establish tracking and command earth stations and satellite control centres in or outside India.
- The companies will be able to offer the capacity to commercial and societal communications within the country as well as outside, they can also supply their systems and solutions to the International market.
- Firms will also be able to avail of Indian resources from the designated entities under DoS on a commercial basis. While foreign resources can be used following the new norms.
- The draft also adds that the satellite communication systems which can't be in an open to all commercial domain will be brought into operation with the government's involvement for sustainability.

National Biopharma Mission

In news

Department of Biotechnology (DBT), has initiated the National Biopharma Mission entitled: "Industry-Academia Collaborative Mission for Accelerating Discovery Research to Early Development for Biopharmaceuticals.

Objective

- Development of products from leads that are at advanced stages in the product development lifecycle and relevant to the public health.
- Strengthening and establishing shared infrastructure facilities for both product discovery validation and manufacturing
- Developing human capital by providing specific training to address the critical skills gaps in researchers, nascent biotech companies across the product development value chain, including in business plan development and market penetration.
- Creating and enhancing technology transfer and intellectual property management capacities and capabilities in public and private sector.

National Biopharma Mission

- The National Biopharma Mission (NBM) is an industry-Academia Collaborative Mission for accelerating biopharmaceutical development in the country.
- Under this Mission the Government has launched Innovate in India (i3) programme to create an enabling ecosystem to promote entrepreneurship and indigenous manufacturing in the sector.

- Biotechnology Industry Research Assistance Council (BIRAC) will implement the mission.
- The mission was approved in 2017 at a total cost of Rs 1500 crore and is 50% co-funded by World Bank loan.

Deep-tech for reliable low-cost internet

In news

A women-led startup, has developed an innovative wireless product that gives fibre like bandwidth at fraction of cost of fibre to help telecom operators deliver reliable low-cost internet services to suburban and rural areas.

Highlight

- Reaching internet access to remote places in countries like India is difficult because laying fibre is too expensive.
- There is a need for wireless backhaul products that can deliver low cost, high data capacity, and wide reach.
- Currently available, wireless backhaul products either do not provide sufficient data speeds or the required range or are very expensive to deploy.

About the technology

- The wireless product called Giga Mesh could enable telecom operators deploy quality, high-speed rural telecom infrastructure at 5 times lower cost.
- The Multi-beam E-band product, Giga Mesh, packs 6 Point-to-Point E-band radios in one, thereby distributing the cost of the device over multiple links and hence reduces capital expenditure.
- The radio provides long-range and multi-Gbps data throughput at each link.
- Features like automatic link alignment, dynamic power allocation between links, and remote link formation help operators achieve significant operating expenditure cost reduction.

Health & Medicine

Janaushadhi Diwas Week 2021

In news

Awareness campaign for Senior Citizens organised , on day 5 of "Janaushadhi Diwas Week 2021"

Janaushadhi Diwas Week

- It is a weeklong celebration that was kicked off from March 1 and will continue till March 7, 2021, wherein Jan Aushadhi Kendras conduct health checkup camps across the country.
- These health check-up camps included Blood Pressure checkup, Sugar level checkup, free doctor consultation, free medicine distribution, etc.
- Bureau of Pharma PSUs of India (BPPI), the implementing agency of Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP) announced the 2021 theme to be '**Seva Bhi – Rozgar Bhi**'.
- The Pradhan Mantri Jan Aushadhi Pariyojana was launched by Prime Minister Narendra Modi in 2019.

Objective

Making quality medicines available at affordable prices for all, particularly the poor and disadvantaged, through exclusive outlets **“Pradhan Mantri Bhartiya Janaushadhi Kendras”**, so as to reduce out of pocket expenses in healthcare.

Desikan Bhawan

In news

Union Minister of Health and Family Welfare, Govt. of India inaugurated the new research building ‘Desikan Bhawan’ equipped with new COVID-19 diagnostic facility at ICMR-NJIL&OMD, Agra

Highlights

- The building is dedicated for research facilities like animal experimentation, COVID-19 diagnosis, whole genome sequencing of different Mycobacteriu: species and phytochemical extraction from medicinal plants for anti-TB drug development.
- The capacity of COVID-19 Diagnostic Laboratory is around 1200 samples per day.
- This COVID diagnostic lab is loaded with Biosafety level II (BSL I) cabinets, automated RNA extractors, and Real Time PCR machines with which the diagnostic results can be reported within a day.

About the Institute

- ICMR- National JALMA Institute for Leprosy and Other Mycobacterial Diseases, Agra was established in 1967 by the Japan Leprosy Mission for Asia (JALMA) and was handed over to the Indian Council of Medical Research in 1976.
- ICMR-NJIL&OMD carries out basic and applied research on leprosy, TB and other mycobacterial diseases in the following thrust areas:
 - Early diagnosis and treatment, transmission dynamics
 - Prevention of deformities in leprosy
 - Field studies
 - Operational research
 - Laboratory research on mycobacterial diseases and MIP vaccine to leprosy.

Pradhan Mantri Swasthya Suraksha Nidhi

In news

Cabinet approves creation of Pradhan Mantri Swasthya Suraksha Nidhi as a single non-lapsable reserve fund for Health from the proceeds of health and Education Cess

Salient features of the PMSSN

- A non-lapsable reserve fund for Health in the Public Account;
- Proceeds of share of health in the Health and Education Cess will be credited into PMSSN;
- Accruals into the PMSSN will be utilized for the flagship schemes of the Ministry of Health & Family Welfare namely,
 - Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)
 - Ayushman Bharat - Health and Wellness Centres (AB-HWCs)
 - National Health Mission
 - Pradhan Mantri Swasthya Suraksha Yojana (PMSSY)
 - Emergency & disaster preparedness and responses during health emergencies

- Any future programme/scheme that targets to achieve progress towards SDGs and the targets set out in the National Health Policy (NHP) 2017.
- Administration and maintenance of the PMSSN is entrusted to Ministry of Health & Family Welfare; and
- In any financial year, the expenditure on such schemes of the MoHFW would be initially incurred from the PMSSN and thereafter, from Gross Budgetary Support (GBS).

Benefits

The major benefit will be: enhanced access to universal & affordable health care through availability of earmarked resources, while ensuring that the amount does not lapse at the end of financial year.

India-UK Cancer Research Initiative

In news

The Department of Biotechnology (DBT) and Cancer Research UK (CRUK) signed a Memorandum of Understanding (MoU) for a Cancer Research Initiative, "Affordable Approaches to Cancer" on 14th November 2018 during the Inaugural Researcher's Summit held from 14th- 16th November 2018 in New Delhi.

Aim

To support high quality research to deliver innovative and translatable outputs that accelerate progress against cancer outcomes in both the countries, and which also have the potential to have major global impact.

Seven seed grants

Under the initiative, the core challenges have been identified and seven seed grants have been awarded. The seven seed grants awarded are to work on affordable approaches to improve early diagnosis of symptomatic cancers

- Affordable screening tools to improve early detection of cancer;
- Risk factors to better understand regional variations in incidence, enabling new approaches to cancer prevention;
- Computational approaches that can reduce the cost of cancer care delivery;
- Affordability of effective cancer treatments;
- Affordable screening tools to improve early detection of cancer;
- Affordability of effective cancer treatments.

The investment thus far by both the countries as matching grant for supporting 7 seed grants is ₹ 1.86 Cr.

Tribal TB Initiative

In news

Dr Harsh Vardhan launches Tribal TB Initiative in pursuit of TB Mukht Bharat

TB and tribals

- In India, we have over 10 Cr tribal population living with a huge diversity in their population dynamics.
- Through constant efforts, our government is able to see developments in their health indicators and overall wellbeing.
- The government has already increased the Budget allocation for TB in India a four-fold in the last 5 years. High quality drugs, diagnostics, digital initiatives, innovative private sector interventions and community engagement intervention, are all aligned to rapidly decline TB incidence and mortality in the country."
- 177 tribal districts were identified as high priority districts where physical remoteness, malnutrition, poor living conditions and lack of awareness contribute to the vulnerability of the tribal population to TB.

- Initially, the activities of the joint plan will be focusing on 161 districts across 18 identified States.
- They would involve deploying improved vulnerability mapping techniques, organization of sensitization and capacity building workshops for volunteers, periodic TB active case finding drives, provision of TB Preventive Therapy (IPT) to identified vulnerable population and develop long term mechanisms for vulnerability reduction.

Ayurveda Parav

In news

Vinoba SevaPratisthan (VSP), in collaboration with the Ministry of AYUSH, has successfully organized a 3-days “Ayurveda Paravin Bhubaneswar.

Details

- This unique initiative aims to not only ensure greater acceptance of Ayurveda among the masses but also to popularize Ayurveda as the mainline of treatment for the current lifestyle diseases.
- The Ministry of AYUSH provided full-fledged support to this programme.
- The event emphasised the need of promotion of Ayurveda in the current situation.
- During this Parv, nearly 25 research papers were presented by experts and researchers.

Vinoba Seva Pratisthan

- It is an association of people and communities who carry a Gandhian Philosophy in life and action, has been formed and inspired by the pragmatic and humanistic work-ethics and values of Mahatma Gandhi and his number one disciple Vinoba Bhave.
- The organization is a common platform for the like-minded people to work together for human development.

Ecology & Environment

Monitoring Committee to Identify Polluted Rivers

In news

Central Pollution Control Board (CPCB) in collaboration with the State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) is regularly monitoring the water quality of rivers & other water bodies in the country through a network of monitoring stations.

Data

- As per CPCB report of September, 2018, 351 polluted river stretches have been identified on 323 rivers based on monitoring results in terms of Bio-chemical Oxygen Demand(BOD) levels, an indicator of organic pollution.
- National River Conservation Plan (NRCP) has so far covered polluted stretches of 34 rivers in 77 towns spread over 16 States in the country with a sanctioned cost of Rs.5965.90 crore & sewage treatment capacity of 2522.03 million litres per day (mld) has been created.

Constitutional provision

- As per the Provisions of Environment (Protection) Act, 1986 and Water (Prevention & Control of Pollution), Act 1974, industrial units are required to install effluent treatment plants (ETPs) and treat their effluents to comply with stipulated environmental standards before discharging into rivers and water bodies.
- Accordingly, CPCB, SPCBs and PCCs monitor industries with respect to effluent discharge standards and take action for non-compliance under provisions of these Acts.

Steps taken by the Government

- Steps taken by the Government to stop discharge of industrial effluents into rivers inter alia, include issuance of notification of specific discharge standards, revision of the criteria for categorization of industries and issuing directions to all State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) to adopt the same, issuance of consent to establish/consent to operate by the SPCBs/PCCs,
- It would be based on Comprehensive Environment Pollution Index (CEPI) critically polluted areas are identified to take necessary measures through time-targeted Action Plans, regular inspections of Grossly Polluting Industries (GPIs) by CPCB for compliance verification, installation of Online Continuous Effluent Monitoring System (OCEMS) for assessment of effluent quality and compliance status.
- In addition, the industries are encouraged to reduce their waste water generation by technological advancement, reuse/recycle of wastewater and maintain Zero Liquid Discharge (ZLD) where ever possible.

Project RE-HAB to Prevent Elephant

In news

Khadi and Village Industries Commission (KVIC), launched a unique project of creating “bee-fences” to mitigate human – elephant conflicts in the country.

Objective

The objective of Project RE-HAB (Reducing Elephant – Human Attacks using Bees) is to thwart elephant attacks in human habitations using honey bees and thus reducing loss of lives of both, humans as well as elephants.

Details

- The pilot project was launched at four locations around village Chelur in Kodagu district of Karnataka on 15th March, 2021 by KVIC Chairman Shri Vinai Kumar Saxena.
- These spots are located on the periphery of Nagarhole National Park and Tiger Reserve and prone to human-elephant conflicts. The total cost of the RE-HAB project is just Rs. 15 lakh.
- Project RE-HAB is a sub-mission under KVIC’s National Honey Mission.
- The Honey Mission is a programme to increase the bee population, honey production and beekeepers’ income by setting up apiaries, Project RE-HAB uses bee boxes as a fence to prevent the attack of elephants.

Honey Mission

- KVIC has set up 15-20 interspersed bee boxes at each of the four locations in the passage ways of elephant-human conflict zones to block the entrance of elephants to human habitations.
- The boxes are connected with a string so that when elephants attempt to pass through, a tug or pull causes the bees to swarm the elephant herds and dissuade them from progressing further.
- Bee boxes have been placed on the ground as well as hung from the trees to block the passage of elephants.
- High resolution, night vision cameras have been installed at strategic points to record the impact of bees on elephants and their behavior in these zones.

6 tigers missing in Ranthambore

In news

Six tigers — four adults and two sub-adults — have been unaccounted for since March 2020 in the Ranthambore tiger sanctuary, Rajasthan"

- Independent wildlife groups such as Tiger Watch have alleged that the tigers have been missing for over a year and that poaching is the reason
- The National Tiger Conservation Authority, a wing of the Union Environment Ministry, has constituted a committee over the disappearance of the tigers.

Ranthambore National Park

- It is one of the biggest and most renowned national parks in Northern India.
- The park is located in the Sawai Madhopur district of south eastern Rajasthan, which is about 130 km from Jaipur.]
- Once considered as one of the famous and former hunting grounds of the Maharajas of Jaipur, today the Ranthambore National Park terrain is a major wildlife tourist attraction that has drawn the attention of many wildlife photographers and lovers.
- Ranthambore National Park harbours dry deciduous forests and open grassy meadow.
- The flora of the park includes 539 species of flowering plants.

Jal Shakti Abhiyan: Catch the Rain

In news

Prime Minister Shri Narendra Modi launched the 'Jal Shakti Abhiyan: Catch the Rain' campaign on World Water Day i.e. on 22nd March 2021

Details

- The Campaign will be undertaken across the country, in both rural and urban areas, with the theme "catch the rain, where it falls, when it falls".
- It will be launched as a Jan Andolan to take water conservation at grass-root level through people's participation.
- It is intended to nudge all stakeholders to create rainwater harvesting structures suitable to the climatic conditions and subsoil strata, to ensure proper storage of rainwater.

About MoA for Ken Betwa Link Project

- The agreement heralds the beginning of inter- state cooperation to implement the vision of Former Prime Minister Shri Atal Bihari Vajpayee to carry water from areas that have surplus water to drought prone and water deficit areas, through the interlinking of rivers.
- This project involves transfer of water from the Ken to the Betwa River through the construction of Daudhan Dam and a canal linking the two rivers, the Lower Orr Project, Kotha Barrage and Bina Complex Multipurpose Project.
- It will provide annual irrigation of 10.62 lakh ha, drinking water supply to about 62 lakh people and also generate 103 MW of hydropower.
- It will pave the way for more interlinking of river projects to ensure that scarcity of water does not become an inhibitor for development in the country.

International Day of Forests

In news

The United Nations observes March 21 as the International Day of Forests, commemorating the green cover around the world and reiterating its importance.

Theme

“Forest restoration: a path to recovery and well-being”.

Highlights

- The United Nations General Assembly proclaimed March 21 as the International Day of Forests (IDF) in 2012.
- The Day celebrates and raises awareness of the importance of all types of forests.
- On this day, countries are encouraged to undertake local, national and international efforts to organize activities involving forests and trees, such as tree-planting campaigns.

Forest cover in India

- Since Independence, a fifth of India’s land has consistently been under forests, despite the population increasing more than three times.
- As per the biennial State of Forest Report, 2019, India’s forest cover has increased by 3,976 sq km or 0.56% since 2017.
- For the second consecutive time since 2007, the report recorded a gain — an impressive 1,275 sq km — in dense forest (including very dense forest with a canopy density of over 70%, and moderately dense forest with a canopy density of 40-70%).

Contamination of Ground Water

In news

Central Ground Water Board (CGWB) generates ground water quality data on a regional scale through ground water quality monitoring throughout the country

Role of government

- Water being State subject, initiatives on water management including taking corrective action related to ground water quality in the country is primarily States’ responsibility.
- However, **Central Pollution Control Board (CPCB)** in association with State Pollution Control Boards/Pollution Control Committees (SPCBs/PCCs) is implementing the provisions of The Water (Prevention & Control) Act, 1974 & The Environment (Protection) Act, 1986 to prevent and control pollution.
- Government of India in partnership with States, is implementing **Jal Jeevan Mission (JJM)** to provide potable tap water supply to every rural household in the country, by 2024.
- Under JJM, while planning water supply schemes to provide tap water supply to rural households, priority is given to quality-affected habitations which, inter alia, includes habitations affected with Arsenic and Fluoride contamination.
- Under **Atal Mission for Rejuvenation and Urban Transformation (AMRUT)** launched on 25th June, 2015 in selected 500 cities with focus on development of urban infrastructure
- CGWB has constructed several exploratory and observation wells in the Country tapping the Arsenic safe deeper aquifer zones delineated through exploration aided detailed aquifer mapping under National Aquifer Mapping programme.

Impacts of Groundwater Contamination with Fluoride and Arsenic

- In India, high Fluoride concentrations in groundwater (greater than 1 mg/l – milligrams per litre) are widespread in the arid to semi-arid western states of Rajasthan and Gujarat and in the southern states of Andhra Pradesh, Karnataka and Tamil Nadu.
- Arsenic in groundwater is emerging as a widespread problem in the floodplains of the Ganges Meghna-Brahmaputra (GMB).
- In India, many areas from West Bengal have been shown to be affected whereas Bihar is an emerging area with high Arsenic contamination.
- Fluorosis is a crippling disorder due to entry of Fluoride in the body, which affects every organ, tissue, cells in the body, and results in health complaints having overlapping manifestations with several other diseases like gout and osteoporosis.

Mechanism for Prediction of Rainfall

In news

Rainfall prediction is given in different time scales, i.e. seasonal forecast

- Seasonal forecast (for the whole season),
- Extended range forecast (up to four weeks),
- Short-medium range forecast (up to 7 days)
- Nowcasts (up to 3 hrs).

Methods used in forecasting

Global Forecast System (GFS)

- Since December 2016, IMD is using the Global Forecast System (GFS) and Unified model run at National Centre for Medium Range Weather Forecast (NCMRWF) operationally every day to generate deterministic forecasts at 12 km horizontal resolution in the short to medium range (up to 7 days).
- The GFS assimilates global conventional atmospheric data as well as the data from satellites and weather radars.
- There also exists a high resolution meso-scale model with 3 km resolution to provide location specific forecast.

Global Ensemble Prediction System (GEPS)

- In addition, a high resolution (12 km grid scale) state of the art **Global Ensemble Prediction System (GEPS)** namely Global Ensemble Forecasting System (GEFS) and Unified model Ensemble Prediction System (UMEPS) was commissioned on 01 June 2018 for generating operational probabilistic weather forecasts for 10 days.
- The GEPS has enhanced the weather information being provided by the current models by quantifying the uncertainties in the weather forecasts.

Significance

All these initiatives have helped to improve the skill of monsoon rainfall forecasts over the country.

Project Mausam

Context

'Mausam' is the initiative of Ministry of Culture to be implemented by the Archaeological Survey of India (ASI) as the nodal agency with research support of the Indira Gandhi National Centre for the Arts (IGNCA) and National Museum.

Aim

To explore the multi-faceted Indian Ocean ‘world’ – collating archaeological and historical research in order to document the diversity of cultural, commercial and religious interactions in the Indian Ocean.

Objective

To inscribe places and sites identified under Project Mausam as trans-national nomination for inscription on UNESCO’s World Heritage List.

Details

- Indian Missions in the 39 countries have approached local authorities and several countries including the following, have nominated their resource persons for the Project Mausam: -
- Bangladesh, Cambodia, Saudi Arabia, Thailand, Indonesia, Oman, Qatar, Singapore, Malaysia, The Islamic republic of Iran, UAE, Myanmar, Philippines and Jordan.
- It is proposed to hold an international conference with these experts on the next steps forward.
- It is proposed to prepare two transnational nominations namely; (a) Routes followed by the Cholas in the Southeast Asia region and; (b) Spread of Buddhism through land and sea routes in the South and Southeast Asian region (those countries that are a part of Project Mausam).

International Relation

MoU between India and France on Renewable Energy Cooperation

In news

Memorandum of Understanding (MoU) between India and French Republic in the field of renewable energy cooperation

Objective

The objective of the MoU is to establish the basis for promotion of bilateral cooperation in the field of new and renewable energy on the basis of mutual benefit, equality and reciprocity.

The MoU entails

- Exchange and training of scientific and technical personnel;
- Exchange of scientific and technological information and data;
- Organization of workshops and seminars; transfer of equipment, know-how and technology;
- Development of joint research and technological projects.

Significance

This MoU will help in the development of technological know-how in the field of Renewable Energy and thereby aid the process of attaining the ambitious target of 450 GW of installed Renewable Energy capacity by 2030.

‘Maitri Setu’

In news

Prime Minister Shri Narendra Modi will inaugurate ‘Maitri Setu’ between India and Bangladesh on 9th March 2021 at 12 noon via video conferencing

About the bridge

- The bridge 'Maitri Setu' has been built over Feni river which flows between Indian boundary in Tripura State and Bangladesh.
- The name 'Maitri Setu' symbolizes growing bilateral relations and friendly ties between India and Bangladesh.
- The National Highways took up the construction and Infrastructure Development Corporation Ltd at a project cost of Rs. 133 Crores.
- The 1.9 Km long bridge joins Sabroom in India with Ramgarh in Bangladesh. It is poised to herald a new chapter for trade and people to people movement between India and Bangladesh.
- With this inauguration, Tripura is set to become the 'Gateway of North East' with access to Chittagong Port of Bangladesh, which is just 80 Kms from Sabroom.

Other major projects

- Prime Minister will also lay the foundation stone for setting up an Integrated Check Post at Sabroom.
- It will help ease the movement of goods and passengers between the two countries, provide new market opportunities for products of North East states and assist seamless movement of passengers to and from India and Bangladesh.
- The project is being taken up by the Land Ports Authority of India at an estimated cost of about Rs. 232 Crores.
- Prime Minister will also lay the foundation stone of NH 208 connecting the Unakoti district headquarters at Kailashahar with the Khowai district headquarters. It will provide an alternative route to the NH 44.
- The 80 Km NH 208 project has been taken up by the National Highways & Infrastructure Development Corporation Limited with a project cost of Rs. 1078 Crores.

Indo-Uzbekistan Field Training Exercise 'DUSTLIK

In news

The India – Uzbekistan joint military exercise "DUSTLIK II" commenced today in Foreign Training Node Chaubatia, Ranikhet (Uttarakhand)

Highlights

- This is the Second Edition of annual bilateral joint exercise of both armies. It will continue till 19th March 2021.
- The first edition of the exercise was held at Uzbekistan in Nov 2019.
- 45 Soldiers each from Uzbekistan and Indian Army are participating in the exercise.
- Both contingents will be sharing their expertise and skills in the field of counter terrorist operations in mountainous/rural/urban scenario under UN mandate.
- The exercise will culminate into a 36 hours joint validation exercise scheduled from 17 to 18 March 21.

Significance

This joint exercise will definitely provide impetus to the ever growing military and diplomatic ties between the two nations and also reflects the strong resolve of both nations to counter terrorism.

MISSION SAGAR IV

In news

As part of Mission Sagar-IV, Indian Naval Ship Jalashwa arrived at Port Anjouan, Comoros on 14 March 2021 to deliver 1,000 Metric Tonnes of rice.

Highlights

- This is the second visit of an Indian Navy ship to the island country within a span of one year.
- Comoros and India have always enjoyed close and friendly relations and have similarities of view on regional and global issues.
- 'Mission Sagar', builds on the excellent relations existing between the two countries and deployment also resonates the vision of our Prime Minister of Security and Growth for All in the Region 'SAGAR' and highlights the importance accorded by India to relations with the countries of the IOR.
- The operation is being progressed in close coordination with the Ministries of External Affairs, and other agencies of the Government of India.

Mission Sagar

- 'Mission Sagar' is inspired by **Prime Minister Modi's vision of SAGAR (Security and Growth for All in the Region)**.
- It highlights the importance accorded by India to **relations with its maritime neighbours and further strengthens the existing bond**.
- Under this mission, **India sent INS Kesari to Maldives, Mauritius, Seychelles, Madagascar and Comoros**, carrying COVID-19 related medicines, medical assistance teams and food items.

India-UK Cancer Research Initiative

In news

The Department of Biotechnology (DBT) and Cancer Research UK (CRUK) signed a Memorandum of Understanding (MoU) for a Cancer Research Initiative, "Affordable Approaches to Cancer" on 14th November 2018 during the Inaugural Researcher's Summit held from 14th- 16th November 2018 in New Delhi.

Aim

To support high quality research to deliver innovative and translatable outputs that accelerate progress against cancer outcomes in both the countries, and which also have the potential to have major global impact.

Seven seed grants

Under the initiative, the core challenges have been identified and seven seed grants have been awarded. The seven seed grants awarded are to work on affordable approaches to improve early diagnosis of symptomatic cancers

- Affordable screening tools to improve early detection of cancer;
- Risk factors to better understand regional variations in incidence, enabling new approaches to cancer prevention;
- Computational approaches that can reduce the cost of cancer care delivery;
- Affordability of effective cancer treatments;
- Affordable screening tools to improve early detection of cancer;
- Affordability of effective cancer treatments.

The investment thus far by both the countries as matching grant for supporting 7 seed grants is ₹ 1.86 Cr.

National Day Programme

In news

Prime Minister Shri Narendra Modi, during his two-day visit to Bangladesh attended as Guest of Honour, the Golden Jubilee of Independence of Bangladesh.

Highlights

- Recitations from Holy books including Quran, Bhagavad Gita, Tripitaka and Bible kick started the event.
- Prime Minister Narendra Modi handed over Gandhi Peace Prize 2020 posthumously conferred to Sheikh Mujibur Rahman to Sheikh Rehana, younger daughter of Sheikh Mujibur Rahman accompanied by her sister Prime Minister Sheikh Hasina.
- This award was conferred in recognition of his outstanding contributions towards social, economic and political transformation through non-violent and other Gandhian methods.
- It commemorates the country's declaration of independence from Pakistan in the early hours of 26 March 1971

History

- In the 1970 Pakistani general election under the military government of President Yahya Khan, the largest political party Awami League led by Sheikh Mujibur Rahman won a clear majority in East Pakistan national seats as well as provincial assembly.
- Zulfikar Ali Bhutto conspired with Yahya Khan and changed their position, refusing to hand over power to Sheikh Mujib.
- Negotiations began but Sheikh Mujib was not trusted by the ruling west Pakistani leadership, having Agartala conspiracy case in vision.
- When it became clear that promises given earlier were not going to followed through, the whole nation of Bangla-speaking Muslims and Hindus of East Pakistan began a spirited struggle for independence.
- On 7 March 1971 Sheikh Mujib gave his famous speech at the Ramna Race course where he called for a non-cooperation movement.

Indo-Korean friendship park

In news

Defence Minister Rajnath Singh and Minister of National Defence of South Korea Suh Wook jointly inaugurated an Indo-Korean friendship park at Delhi cantonment.

Details

- The park has been built to commemorate the contribution of Indian peacekeeping force during the Korean war of 1950-53.
- South Korea has been a major supplier of weapons and military equipment to India.
- In 2019, the two countries finalised a roadmap for cooperation in joint production of various land and naval systems.
- The park has been developed in joint consultation with Ministry of Defence, Government of India, Indian Army, Delhi Cantonment Board, Emabssy of Korea and Korean War Veterans Association of India.

India-South Korea relations

- Formal establishment of diplomatic ties between the two countries occurred in 1973.
- Since then, several trade agreements have been reached: Agreement on Trade Promotion and Economic and Technological Co-operation in 1974.
- Agreement on Co-operation in Science & Technology in 1976;=
- Convention on Double Taxation Avoidance in 1985; and Bilateral Investment Promotion/ Protection Agreement in 1996.
- Trade between the two nations has increased greatly, from \$530 million during the fiscal year of 1992-1993, to US\$10 billion during 2006-2007.[1] It further increased to US\$17.6 billion in the year 2013.

Global Ayurveda Festival

In news

In the New Normal, Global Ayurveda Festival (GAF) is going digital, as the world's largest festival of Ayurveda community.

Aim

Global discussion and development of ayurveda, would be held from March 12 to 19 as a virtual meet.

Highlights

- The conference will focus on the relevance of ayurveda in the post-Covid-19 world and the potential of ayurveda in enhancing immunity.
- This time the exhibition will be held in virtual and have stalls of ayurveda companies from all over the world
- The festival is organised in collaboration with various departments of the Central and state governments and delegates from different countries would share their experiences.
- The ayurveda exhibition will showcase technologies, products and services focusing on medical tourism, herbs and research," the release said.
- The Federation of Indian Chambers of Commerce and Industries (FICCI) is the festival partner and industry partner.

Information Society Forum 2021

In news

The World Summit on the Information Society (WSIS) Forum 2021 represents one of the world's largest annual gathering of the 'ICT for development' community

Organised by

It is co-organized by International Telecommunications Union (ITU), UNESCO, UNDP and UNCTAD.

Information Society Forum 2021

- The World Summit on the Information Society Forum 2021 represents the world's largest annual gathering of the 'ICT for development' community.
- The WSIS Forum, co-organized by ITU, UNESCO, UNDP and UNCTAD, in close collaboration with all WSIS Action Line Facilitators/Co-Facilitators, has proven to be an efficient mechanism for coordination of multi-stakeholder implementation activities, information exchange, creation of knowledge, sharing of best practices and continues to provide assistance in developing multi-stakeholder and public/private partnerships to advance development goals.
- This Forum will provide structured opportunities to network, learn and participate in multi-stakeholder discussions and consultations on WSIS implementation.
- The Agenda and Programme of the Forum will be built on the basis of the submissions received during the Open Consultation Process.

Scheme & Policies

Nine Compressed Biogas Plants Commissioned

In news

9 CBG plants have been commissioned and started supply of CBG under SATAT scheme

Sustainable Alternative Towards Affordable Transportation (SATAT)

- Sustainable Alternative Towards Affordable Transportation (SATAT) scheme was launched on October 01, 2018.
- In this scheme Oil and Gas Marketing Companies (OGMCs) are inviting Expression of Interest (EoI) from potential entrepreneur to procure Compressed Bio Gas (CBG).
- Under this scheme few of the enablers like assured price for offtake of CBG with long term agreements by OGMCs.

Application

- The entrepreneurs depending upon various factors including feedstock techno-commercial feasibility, etc choose technology for a plant.
- Conversion of waste/ bio-mass into CBG has multiple benefits viz. reduction of natural gas import, reduction of GHG emission, reduction in burning of agriculture residues, remunerative income to farmers, employment generation, effective waste management etc., and at present is being supplied as fuel in transportation sector.

Women and Child Development major schemes

In news

All major schemes of the Ministry have been classified under 3 umbrella schemes viz. Mission Poshan 2.0, Mission Vatsalya and Mission Shakti

Objective

To address gaps in State action for women and children and to promote inter-ministerial and inter-sectoral convergence to create gender equitable and child centred legislation, policies and programmes.

Umbrella Schemes

- **Saksham Anganwadi and POSHAN 2.0**

Umbrella ICDS - Anganwadi Services, Poshan Abhiyan, Scheme for Adolescent Girls, National Creche Scheme

- **Mission VATSALYA**

Child Protection Services and Child Welfare Services

- **Mission Shakti (Mission for Protection and Empowerment for Women)**

SAMBAL (One Stop Centre, Mahila Police Volunteer, Women's Helpline/Swadhar/Ujjawala/Widow Homes etc.)

SAMARTHYA (Beti Bachao Beti Padhao, Creche, Pradhan Mantri Matru Vandana Yojana/ Gender Budgeting/Research

Agriculture Voltage Technology

In news

ICAR-Central Arid Zone Research Institute, Jodhpur, developed Agri-voltaic system of 105 KW capacity

Highlights

- This technology can increase the income of farmers by generation of electricity and growing of cash crops simultaneously on the same piece of land.

- Under component-I of KUSUM (*Kisan Urja Suraksha Utthan Mahabhiyan*) scheme, there is a provision for installation of agri-voltaic system in farmers' fields with a capacity ranging from 500 KW to 2 MW.
- National Solar Energy Federation of India (NSEFI) has also documented 13 operational agri-voltaic systems in the country managed by different solar PV functionaries and public Institutes.

KUSUM (*Kisan Urja Suraksha Utthan Mahabhiyan*) scheme

The scheme is aimed at ensuring energy security for farmers in India, along with honouring India's commitment to increase the share of installed capacity of electric power from non-fossil-fuel sources to 40% by 2030 as part of Intended Nationally Determined Contributions (INDCs).

Pradhan Mantri Swasthya Suraksha Nidhi

In news

Cabinet approves creation of Pradhan Mantri Swasthya Suraksha Nidhi as a single non-lapsable reserve fund for Health from the proceeds of health and Education Cess

Salient features of the PMSSN

- A non-lapsable reserve fund for Health in the Public Account;
- Proceeds of share of health in the Health and Education Cess will be credited into PMSSN;
- Accruals into the PMSSN will be utilized for the flagship schemes of the Ministry of Health & Family Welfare namely,
- Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)
- Ayushman Bharat - Health and Wellness Centres (AB-HWCs)
- National Health Mission
- Pradhan Mantri Swasthya Suraksha Yojana (PMSSY)
- Emergency & disaster preparedness and responses during health emergencies
- Any future programme/scheme that targets to achieve progress towards SDGs and the targets set out in the National Health Policy (NHP) 2017.
- Administration and maintenance of the PMSSN is entrusted to Ministry of Health & Family Welfare; and
- In any financial year, the expenditure on such schemes of the MoHFW would be initially incurred from the PMSSN and thereafter, from Gross Budgetary Support (GBS).

Benefits

The major benefit will be: enhanced access to universal & affordable health care through availability of earmarked resources, while ensuring that the amount does not lapse at the end of financial year.

17 States implement One Nation One Ration Card system

In news

Seventeen (17) States have successfully operationalised "One Nation One Ration Card system" with Uttarakhand being the latest State to complete the reform

Highlights

- States completing One Nation One Ration Card system reform are eligible for additional borrowing of 0.25 percent of Gross State Domestic Product (GSDP).
- One Nation One Ration Card System is an important citizen centric reform.

Significance

- Its implementation ensures availability of ration to beneficiaries under National Food Security Act (NFSA) and other welfare schemes, especially the migrant workers and their families, at any Fair Price Shop (FPS) across the country.
- The reform especially empowers the migratory population mostly labourers, daily wagers, urban poor like rag pickers, street dwellers, temporary workers in organised and unorganised sectors, domestic workers etc, who frequently change their place of dwelling to be self reliant in food security.
- The reform also enables the States in better targeting of beneficiaries, elimination of bogus/duplicate/ineligible card holders resulting in enhanced welfare and reduced leakage.

Mera Ration mobile app

In news

Mera Ration mobile app was launched in conference on “One Nation One Ration Card” (ONORC) plan

Details

- During the period April 2020 to Feb 2021, a total of about 15.4 Crore portability transactions have been recorded under ONORC.
- The integration of Migrants’ Portal with ONORC system is undertaken with the support of M/o Labour & Employment, ONORC has been made a part of PM SVANidhi program of M/o Housing & Urban Affairs, Awareness campaigning for migrants.
- The Department for the nation-wide portability of ration cards under National Food Security Act (NFSA) is implementing the ONORC scheme.
- This system allows all NFSA beneficiaries, particularly migrant beneficiaries, to claim either full or part food grains from any Fair Price Shop (FPS) in the country through existing ration card with biometric/Aadhaar authentication in a seamless manner.
- The system also allows their family members back home, if any, to claim the balance foodgrains on same the ration card.

Poshan Pakhwada

In news

Ministry of Women and Child Development is celebrating Poshan Pakhwada from 16th to 31st March, 2021

POSHAN Abhiyaan

- The Hon’ble Prime Minister launched PM’s Overarching Scheme for Holistic Nourishment on 8th March, 2018.
- It aims to reduce malnutrition from the Country in a phased manner, through the life cycle concept, by adopting a synergized and result oriented approach.
- The goals of POSHAN Abhiyaan (NNM) are to achieve improvement in the nutritional status of Children from 0-6 years, Adolescent Girls, Pregnant Women and Lactating Mothers in a time bound manner with fixed targets.
- It also aims to bring down stunting of children in the age group of 0-6 years from 38.4% to 25% by the year 2022.

Van Dhan Vikas Yojana

Context

- The Van Dhan Vikas Yojana is a programme for value addition, branding & marketing of Minor Forest Produce by establishing Van Dhan Kendras to facilitate creation of sustainable livelihoods for the forest-based tribes.
- One major scheme that has contributed to increasing employment and income generation among the tribal population is the Van Dhan tribal start-ups programme,

In news

Manipur, in particular, which has emerged as the Champion state where the Van Dhan programme has emerged as a major source of employment for the local tribals. **The focus of these initiatives is to make India self-reliant under the Atmanirbhar Abhiyan, with the motto, Go Vocal for Local Go Tribal – Mera Van Mera Dhan Mera Udyam.**

About the scheme

The Van Dhan Yojana or Van Dhan Scheme, a component of the The 'Mechanism for Marketing of Minor Forest Produce (MFP) through Minimum Support Price (MSP) & Development of Value Chain for MFP' was launched on 14th April, 2018. Implemented by TRIFED as the nodal agency at the national level, the Van Dhan start ups is a well thought master plan for the socio-economic development of the tribal population of the country.

PM-KISAN Yojana

Why in news?

Implementation of the scheme in various states are being updated

Highlights

- PM Kisan is a Central Sector scheme with 100% funding from Government of India.
- It has become operational from 1.12.2018.
- Under the scheme an income support of 6,000/- per year in three equal installments will be provided to small and marginal farmer families having combined land holding/ownership of upto 2 hectares.
- Definition of family for the scheme is husband, wife and minor children.
- State Government and UT administration will identify the farmer families which are eligible for support as per scheme guidelines.
- The fund will be directly transferred to the bank accounts of the beneficiaries.
- The first instalment for the period 1.12.2018 to 31.03.2019 is to be provided in the financial year itself.
- There are various Exclusion Categories for the scheme.

Process

- PM-KISAN is a continuous and ongoing Scheme, in which the financial benefits are transferred to the bank accounts of the identified beneficiaries as and when their correct and verified data is uploaded by the concerned States/UTs on PM-KISAN web-portal.
- The data of beneficiaries so uploaded by them undergoes a multi-level verification and validation by various concerned agencies, including the banks, and only then the amount is released into the bank accounts of the beneficiaries.

Mission Innovation

In news

India has established the partnerships with the key countries and is playing a key role through knowledge generation and innovations

Highlights

- The areas include biotechnology and allied disciplines including, energy, water, health, which are global challenges.
- India has emerged as a key mover of global S&T partnerships in critical areas.

About the mission

- Mission Innovation (MI) is a global initiative of 24 countries and the European Commission (on behalf of the European Union) working to reinvigorate and accelerate global clean energy innovation with the objective to make clean energy widely affordable.
- MI was announced at COP21 on November 30, 2015, as world leaders came together in Paris to commit to ambitious efforts to combat climate change.

One District One Product

In news

The Ministry of Food Processing Industries (MoFPI) under Centrally Sponsored Pradhan Mantri Formalisation of Micro Food Processing Enterprises Scheme (PM FME Scheme), provides financial, technical and business support for upgradation of existing micro food processing enterprises.

Objective

To build capacity of two lakh micro enterprises through increased access to credit, integration with organized supply chain by strengthening branding and marketing, increased access to common services, strengthening of institutions, research & training in the food processing sector.

Detail

- State Level Up-gradation Plan (SLUP) by all States/UTs is based on Agriculture production of ODOPs, industrial scenario, market availability etc.
- It enables the States to identify its product clusters, market linkages, stakeholders, requirement of skill development for beneficiaries, infrastructure support, financial linkages etc.

Benefits

- Increased access to credit by existing Micro Food Processing entrepreneurs, FPOs, Self Help Groups and Co-operatives;
- Integration with organized supply chain by strengthening branding & marketing;
- Support for transition of existing 2,00,000 enterprises into formal framework;
- Increased access to common services like common processing facility, laboratories, storage, packaging, marketing and incubation services;
- Strengthening of institutions, research and training in the food processing sector; and
- Empowers SC, ST and Women Entrepreneurs as the scheme lays special focus on SC, ST and women entrepreneurs.
- Increased access for the enterprises, to professional and technical support.

National Livestock Mission in West Bengal

In news

Government of India is implementing various Centrally Sponsored Schemes to complement and supplement the initiatives of West Bengal state to promote Fisheries, Animal Husbandry and Dairying.

Details

- In Dairying sector, Rashtriya Gokul Mission, with the objectives of development and conservation of indigenous bovine breeds, genetic up gradation of bovine population and enhancing milk production and productivity is operating in West Bengal.
- Central assistance of Rs 40.09 crore has been released to the State since inception of the scheme.
- Scheme is being implemented in all the districts of the State including Darjeeling and Kalimpong.
- Livestock Health and Disease Control Scheme (LH&DC) is being implemented in the state with the objectives of disease prevention and improvement of livestock health.
- In the Fisheries sector, 2 schemes namely "Pradhan Mantri Matsya Sampada Yojana" (PMMSY) and Fisheries and Aquaculture Infrastructure Development Fund" (FIDF).

National Livestock Mission

- The National Livestock Mission (NLM) has commenced from 2014-15.
- The Mission is designed to cover all the activities required to ensure quantitative and qualitative improvement in livestock production systems and capacity building of all stakeholders.
- The Mission will cover everything germane to improvement of livestock productivity and support projects and initiatives required for that purpose subject.
- This Mission is formulated with the objective of sustainable development of livestock sector, focusing on improving availability of quality feed and fodder.
- NLM is implemented in all States including Sikkim.

Development of Nomadic Tribes

In news

To promote the socio-economic development of De-notified, Nomadic and Semi-Nomadic Communities, the Development and Welfare Board for De-notified, Nomadic and Semi-Nomadic Communities (DWBDNCs) has been constitute

Objectives

- To formulate and Implement Welfare and Development programme as required, for De-notified, Nomadic and Semi-Nomadic Communities.
- To identify the locations/areas where these communities are densely populated.
- To assess and identify gaps in accessing existing programmes and entitlements and to collaborate with Ministries/Implementing agencies to ensure that ongoing programmes meet the special requirements of De-notified Nomadic and Semi-Nomadic Communities.
- To monitor and evaluate the progress of the schemes of Government of India and the States/UTs with reference to De-notified Nomadic and Semi-Nomadic Communities.
- Any other related work as may be assigned by the Ministry of Social Justice and Empowerment.

Schemes

- Pre and Post Matric Scholarships to DNT Students.
- Nanaji Deshmukh Scheme of Construction of Hostels for DNT Boys and Girls.

- Dr. Ambedkar Pre-Matric and Post-Matric Scholarship for DNT Boys and Girls.

DNTs

- The term 'De-notified Tribes' stands for all those communities which were once notified under the Criminal Tribes Acts, enforced by the British Raj between 1871 and 1947.
- These Acts were repealed by the Independent Indian Government in 1952, and these communities were "De-Notified".
- A few of these communities which were listed as de-notified were also nomadic.

Initiatives by Government for reducing Gender Gap

In news

As per the Global Gender Gap Index Report 2020 published by the World Economic Forum, India ranks 112 out of 153 countries with a score of 0.668 out of 1

Details of the index

India ranked 108 out of 149 countries with a score of 0.665 as per the Global Gender Gap Index Report 2018. Thus, India's performance has marginally improved from 0.665 in 2018 to 0.668 in 2020.

Dimensions Global Gender Gap Index (GGGI)

- Economic participation and opportunity
- Educational attainment
- Health and survival, and
- Political empowerment.

As per the computational mechanism of GGGI, highest performance score on each of these four dimensions is 1. According to the GGGI Report 2020 India has scored 0.354 in economic participation and opportunity, 0.962 in educational attainment, 0.944 in health and survival and 0.411 in political empowerment.

Strategy to improve the index

- Monitoring the performance by engagement with Publishing Agency of GGGI, namely, World Economic Forum
- Identification of Reform Areas and Reform Actions in consultation with concerned Ministries and Departments.

Major initiatives taken by Government of India for removing the gender gap

Economic

- Beti Bachao Beti Padhao (BBBP) ensures the protection, survival and education of the girl child.
- Mahila Shakti Kendra (MSK) aims to empower rural women with opportunities for skill development and employment.
- Working Women Hostel (WWH) ensures the safety and security for working women.
- Scheme for Adolescent Girls aims to empower girls in the age group 11-18 and to improve their social status through nutrition, life skills, home skills and vocational training

Educational Attainment

- Several steps and initiatives have been taken up in school education system such as National Curriculum Framework (NCF) 2005 and flagship programme like Samagra Shiksha and the subsequent Right to Education Act (RTE).
- Kasturba Gandhi Balika Vidyalayas (KGBVs) have been opened in Educationally Backward Blocks (EBBs).

Political Participation

- To bring women in the mainstream of political leadership at the grass root level, government has reserved 33% of the seats in Panchayati Raj Institutions for women.
- Capacity Building of Panchayat Stakeholders including Elected Women Representatives (EWRs) of Ministry of Panchayati Raj is conducted with a view to empowering women to participate effectively in the governance processes.

Miscellaneous

CERA Week

In news

Prime Minister Shri Narendra Modi will receive the CERAWeek Global Energy and Environment Leadership Award and deliver keynote address at the Cambridge Energy Research Associates Week (CERAWeek) 2021

About CERAWeek

- Each year at CERAWeek, the Energy Innovation Pioneer program recognizes companies and entrepreneurs whose technologies and business plans have the potential to transform the energy industry's future.
- Companies are selected based on several criteria, including the feasibility of their plan and scalability of their technology, and are presented at an Energy Insight Breakfast session during the conference.
- CERAWeek was founded in 1983 by Dr. Daniel Yergin.
- It has been organized in Houston in March every year since 1983 and is considered the world's premier annual energy platform. CERAWeek 2021 is being convened virtually from 1st March to 5th March, 2021.

Mission

CERAWeek brings together global leaders to advance new ideas, insight and solutions to the biggest challenges facing the future of energy, the environment, and climate. Now in its 39th year, CERAWeek is widely considered to be the most prestigious annual gathering of CEOs and Ministers from global energy and utilities, as well as automotive, manufacturing, policy and financial communities, along with a growing presence of tech.

Impact

The conference provides an influential platform and podium to communicate important messages that have lasting global impact. CERAWeek receives strong media attention and last year had well over 300 media representatives from around the world.

About the Award

CERAWeek Global Energy and Environment Leadership Award was instituted in 2016. It recognizes the commitment of leadership on the future of global energy & environment and for offering solutions and policies for energy access, affordability & environmental stewardship.

Gandhi Peace Prize for Year 2020

In news

The Gandhi Peace Prize for the year 2020 is being conferred on Bangabandhu Sheikh Mujibur Rahman The award was presented for his outstanding contributions towards social, economic and political transformation through non-violent and other Gandhian methods.

Details

- Gandhi Peace Prize is an annual award instituted by Government of India since 1995, the 125th Birth Anniversary commemoration year of Mahatma Gandhi.
- The award is open to all persons regardless of **nationality, race, language, caste, creed or sex**.
- The Jury for Gandhi Peace Prize is chaired by Hon'ble Prime Minister, Sh Narendra Modi, and comprises of two ex-officio members, namely the Chief Justice of India and Leader of the single largest Opposition Party in Lok Sabha.
- The award carries an amount of Rs. 1 crore, a citation, a plaque and an exquisite traditional handicraft/handloom item.

Bangabandhu Sheikh Mujibur Rahman

- Bangabandhu was a champion of human rights and freedom, and is a hero to Indians as well.
- The legacy and inspiration of Bangabandhu has made the heritage of both countries more comprehensive and deep-rooted, and that the path shown by Bangabandhu has laid a strong foundation for the partnership, progress and prosperity of both countries over the last decade.
- As Bangladesh celebrates Mujib Borsho, India is honoured to be commemorating his legacy jointly with the Government of Bangladesh and its people.
- The Gandhi Peace Prize recognizes the immense and unparalleled contribution of Bangabandhu Sheikh Mujibur Rahman in inspiring the liberation of Bangladesh, bringing stability to a nation born out of strife, laying the foundation for the close and fraternal relations between India and Bangladesh, and promoting peace and non-violence in the Indian subcontinent.

Defence & Security

Successful flight test of Solid Fuel

In news

Defence Research and Development Organisation (DRDO) successfully carried out a flight demonstration based on Solid Fuel Ducted Ramjet (SFDR) technology from Integrated Test Range Chandipur off the coast of Odisha

Highlights

- All the subsystems, including the booster motor and nozzle-less motor, performed as expected.
- During the test, many new technologies were proven, including Solid Fuel based Ducted Ramjet technology.
- Successful demonstration of Solid Fuel based Ducted Ramjet technology has provided DRDO with a technological advantage which will enable it to develop long range air-to-air missiles.
- The performance of the missile was monitored using the data captured by Electro Optical, Radar and Telemetry instruments deployed by ITR and confirmed successful demonstration of the mission objectives.

Ramjet

- It is air-breathing jet engine that operates with no major moving parts.
- It relies on the craft's forward motion to draw in air and on a specially shaped intake passage to compress the air for combustion.
- After fuel sprayed into the engine has been ignited, combustion is self-sustaining.
- As in other jet engines, forward thrust is obtained as a reaction to the rearward rush of hot exhaust gases.

Successful tests of weapon systems by DRDO

In news

Twenty eight (28) successful tests have been carried out by DRDO in the last one year

Highlights

- The major weapons and other systems that have been handed over to the armed forces by DRDO
- Astra Beyond Visual Range Missile System, 10 m Short Span Bridging System, Indian Maritime Situational Awareness System (IMSAS), Heavy Weight Torpedo (HWT) Varunastra, Border Surveillance System (BOSS) and Arjun Mk-1A.
- All systems designed and developed by DRDO are manufactured by the Indian industries which includes both public and private sectors entities.

Systems that are developed by such collaboration

- Advanced Towed Artillery Gun System (ATAGS)
- Extended Range Pinaka System & Guided Pinaka Rocket System
- 10 m Short Span Bridging System
- Indian Maritime Situational Awareness System (IMSAS)
- Heavy Weight Torpedo (HWT) Varunastra
- Border Surveillance System (BOSS) and Arjun Mk-1A etc.

Foreign collaborations

- India-USA Joint Technology Group
- Indo-Israel Management Council
- India-Russia R&D Subgroup
- India-Singapore defence technology steering committee
- India-UK steering committee
- India-Korea steering committee

Steps to reduce border infiltration

In news

The Indian Army has adopted a robust counter infiltration strategy which has an appropriate mix of technology and human resource put together to check infiltration effectively

Details

- Innovative troops deployment, proactive use of surveillance and monitoring devices and the Anti Infiltration Obstacle System (AIOS) have enhanced the ability to detect and intercept terrorists attempting to infiltrate/exfiltrate.
- On the basis of regular analysis of threat assessment and past infiltration attempts, drill and procedures are modified to counter emerging threats.
- The Indian Army, along with Research & Development agencies, regularly upgrade the design of Anti Infiltration Obstacle System (AIOS) on the fence to incorporate 'Smart' components such as Border Surveillance System (BOSS), Laser Fence, Short Range Surveillance Equipment etc.

Measures employed by Indian Army are as under

- Appraisal and upgradation of intelligence gathering capabilities.

- Reorientation of surveillance architecture to enmesh with counter infiltration deployment.
- Augmentation of Anti Infiltration Obstacle System (AIOS) incorporating surveillance assets.
- Enhanced incorporation of aerial platforms, night vision equipment, radars, underground sensors etc. to strengthen the surveillance architecture.
- Maintenance of heightened alert in areas along the LC.

EXERCISE DUSTLIK-II

In news

The second edition of Indo-Uzbekistan Joint Field Training Exercise, EXERCISE DUSTLIK-II culminated on 19 March 2021, after 10 days of mutual learning.

Highlights

- In the joint exercise which began on 10 Mar 2021, training was focused on Counter Insurgency / Counter Terrorism operations in urban scenario as well as sharing of expertise on Skills at Arms.
- The exercise also provided an opportunity to troops of both Armies to foster everlasting professional and social bonding.
- After intense military training, the joint exercise concluded with both Armies exhibiting their combat power and dominance over the terrorist groups during the Validation Exercise.
- The closing ceremony showcased the immense talent with unique traditional touch of both nations.

Way forward

The bonhomie, esprit-de-corps and goodwill generated during the exercise will go a long way in future strengthening the bonds between the armed forces of both countries.

Exercise Desert Flag-VI

In news

Ex Desert Flag is an annual multi-lateral large force employment exercise hosted by UAE

Objective

The objectives for the exercise were to expose coalition participating forces to large force employment, sharpen tactical capabilities, and enhance interoperability along with fostering closer relations between the participating forces.

Aim

The aim for the participating crew and specialist observers was to expose them to operational environment in scenarios requiring multinational forces working together.

Highlights

- IAF participated in the exercise for the first time, fielding Su-30MKI fighter aircraft.
- Six countries; UAE, USA, France, Saudi Arabia and Bahrain apart from India participated with aerial assets. Jordan, Greece, Qatar, Egypt and South Korea participated as observer forces.
- During the exercise IAF flew Large Force Engagement (LFE) missions in near realistic environment involving many aircraft of varied types.
- IAF successfully undertook all the planned missions, both by day and night, without any mission abort.
- IAF has been actively participating in operational international exercises, wherein collaborative engagements are enhanced.

- A multinational Exercise in UAE with friendly forces afforded a unique opportunity to gain valuable learning to all the participating forces.

VAJRA PRAHAR 2021

In news

The 11th edition of Indo-US Joint Special Forces Exercise VAJRA PRAHAR 2021 was conducted at Special Forces Training School located at Bakloh, HP in March 2021

Details

- The joint exercise by the Special Forces of both the countries is conducted alternatively between India and the United States
- It is conducted to share the best practices and experiences in areas such as joint mission planning and operational tactics as also to improve interoperability between the Special Forces of both nations.

Bilateral military exercise

- Bilateral military exercises and defence exchanges are an important facet of deepening bilateral defence cooperation between friendly countries.
- During such events, the armies of participating nations jointly train, plan and execute a series of operations for neutralisation of threats of varied nature with a common aim of countering threats of international terrorism through mutual training and jointness.

