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PIB

Monthly Magazine (SEPTEMBER - 2020)

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PIB INDEX

SR. NO.	TOPIC NAME	PAGE NO.
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		

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pg. 3 Easy to PICK—"PIB Monthly Magazine September -2020

22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		

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The farthest star galaxies in the universe discovered

About :

The discovery was made by a team of astronomers led by Dr Kanak Saha from the Inter-University Centre for Astronomy and Astrophysics (IUCAA) Pune.

Details:

- The discovery was made by the Indian space observatory AstroSat.
- It is remarkable that such faint UV radiation has been detected because usually, such low energy photons usually get absorbed on the way or by the earth's atmosphere.
- Even the Hubble Space Telescope (HST) of NASA could not detect this probably due to noise.
- India's AstroSat/UVIT was able to achieve this unique feat because the background noise in the UVIT detector is much less than in the HST.
- The discovery has been reported in the leading international journal "Nature Astronomy" published from Britain.
- The galaxy, called AUDFs01, is 9.3 billion light-years away from Earth.
- The galaxy, one of the earliest, is located in the Extreme Deep field.
- Even though the observation was made in 2016, it took the scientists almost two years to analyse the data and ascertain that the emission was indeed from a galaxy.
- The scientists were able to discover the galaxy by detecting extreme UV radiation emanating from the galaxy.

About AstroSat:

- AstroSat with a lift-off mass of 1515 kg was launched in 2015 into a 650 km orbit inclined at an angle of 6 degrees to the equator by PSLV-C30 from Satish Dhawan Space Centre, Sriharikota. The minimum useful life of the AstroSat mission is expected to be 5 years.
- The satellite is managed by the spacecraft control centre at Mission Operations Complex (MOX) of ISRO Telemetry, Tracking and Command Network (ISTRAC), Bengaluru.
- AstroSat is India's first space observatory.
- It is the first dedicated Indian astronomy mission aimed at studying celestial sources in X-ray, optical and UV spectral bands simultaneously.
- It enables the simultaneous multi-wavelength observations of various astronomical objects with

a single satellite.

Objectives of the AstroSat mission:

- To understand high energy processes in binary star systems containing neutron stars and black holes.
- Estimate magnetic fields of neutron stars.
- Study star birth regions and high energy processes in star systems lying beyond our galaxy.
- Detect new briefly bright X-ray sources in the sky.
- Perform a limited deep field survey of the Universe in the Ultraviolet region.

Green Term Ahead Market (GTAM)

About ;

Union Power Minister launches the Green Term Ahead Market (GTAM) in electricity as a first step towards greening the Indian short term power market.

Background:

- In August 2020, the Central Electricity Regulatory Commission (CERC) had approved Green term ahead market (GTAM) contracts on the Indian Energy Exchange (IEX) platform.
- Though the renewable penetration in the country is increasing, the participation of renewable energy in the existing DAM and TAM segment has remained negligible (less than 1%), as there has been no segregation between conventional power and green power by the system and the realization going to the generator was at par with conventional power.
- DAM: Day ahead market where transactions in electricity are allowed for a day in advance.
- TAM: Term ahead market where electricity is traded the same day to up to 11 days in advance.
- Also, renewable developers would prefer to tie their generation in advance for longer periods with the consumers to ensure cash flows and project viability.

About GTAM:

- Green Term Ahead Market (GTAM) is an alternative new model introduced for selling off the power by the renewable developers in the open market without getting into long term PPAs.

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pg. 5 Easy to PICK—"PIB Monthly Magazine September -2020

- Also, reportedly, in the absence of a suitable trading platform before, it was observed that the Renewable Energy (RE)-rich States are either backing down RE or selling their surplus RE as conventional power which is leading to losses for both DISCOMS and RE generators.
- Thus, these RE generators and DISCOMS would now be able to access the new niche platform – GTAM – to sell their excess power.
- GTAM will allow the buyers and sellers to trade green power along with the fulfillment of RPO obligations.
- It is a much needed market-based support for renewable energy to achieve the ambitious target of 175 GW of renewables by 2022 as it will provide a new opportunity to RE merchant capacity to sell power and additionally, it would also help spawn new RE merchant plants.
- GTAM is the first exclusive product for the renewable energy sector in the world.

Key features of GTAM:

- Transactions through GTAM will be bilateral in nature with clear identification of corresponding buyers and sellers, there will not be any difficulty in accounting for RPO (renewable purchase obligation).
- GTAM contracts will be segregated into Solar RPO & Non-Solar RPO as RPO targets are also segregated.
- Further, within the two segments, GTAM contracts will have Green Intraday, Day Ahead Contingency, Daily and Weekly Contracts.
 - Green Intraday Contract & Day Ahead Contingency Contract – Bidding will take place on a 15-minute time-block wise MW basis.
 - Daily & Weekly Contracts
- Price discovery will take place on a continuous basis i.e. price time priority basis. Subsequently, looking at the market conditions open auction can be introduced for daily & weekly contracts.
- Energy scheduled through GTAM contract shall be considered as deemed RPO compliance of the buyer.

National Tribal Research Conclave being held virtually.

About the Conclave:

- In the workshop, the Minister will review the progress made in the various projects being implemented under different partnerships and the best practices to be showcased to all stakeholders.
- The Ministry of Tribal Affairs is funding 26 Tribal Research Institutes (TRIs) for research under Grant to TRIs and is engaged in quality research in collaboration with reputed Government and Non-Government Organizations (NGOs) spread over the country.
- The roadmap for the institutes will also be shared in the conclave.
- The National Tribal Research Conclave is being organized by the Centre of Excellence (CoE) for Tribal Affairs, (M/o Tribal Affairs) and the Indian Institute of Public Administration (IIPA), New Delhi.
- This is the second such workshop being, the first one was held in January 2020.

Rural Self Employment Training Institutes

About :

E-Foundation stone laid for National Training Academy for Rural Self Employment Training Institutes in Bengaluru.

Details:

- The new building is the training institute of the National Academy of RUDSETI (NAR).
- The NAR undertakes monitoring, mentoring and capacity building of the Rural Self Employment Training Institutes' staff, State/UT Rural Livelihood Mission staff and the concerned bank officials on behalf of the Ministry of Rural Development.

About the Rural Self Employment Training Institutes (RSETIs):

- They are an initiative of the Ministry of Rural Development.
- These institutes engage in imparting training and skill upgradation of rural youth geared towards entrepreneurship development.
- RSETIs are managed by banks with active cooperation from the Government of India and State Governments.

National Tribal Research Conclave

About :

Union Minister for Tribal Affairs inaugurates the 2-day

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• Objectives of RSETIs:

- Rural BPL youth will be identified and trained for self-employment.
- The training offered will be demand-driven.
- The area in which training will be provided to the trainee will be decided after assessing the candidate's aptitude.
- Hand-holding support will be provided for assured credit linkage with banks.
- Escort services will be provided for at least two years to ensure the sustainability of micro-enterprise trainees.
- The trainees will be provided with intensive short-term residential self-employment training programmes with free food and accommodation.

- Kyrgyzstan
- Russian Federation
- Tajikistan

- Afghanistan and Serbia hold observer status. Uzbekistan was a member from 2006 to 2012.
- Its presidency rotates among its members annually.
- Beyond mutual defence, the CSTO also coordinates efforts in fighting the illegal circulation of weapons among member states and has developed law enforcement training for its members in pursuit of these aims.
- Members also use the organization to counter cyber warfare, narcotics trafficking, the illegal circulation of weapons, transnational crime, and terrorism.
- The CSTO has its origins in the Collective Security Treaty, which took effect in 1994 and included Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan.
- The CSTO is headquartered in Moscow, Russia.

Defence Minister in Moscow

About :

Defence Minister Mr Rajnath Singh addressed the Combined Meeting of Defence Ministers of SCO, CSTO & CIS Member States.

Details:

- The Minister talked about the situation in Afghanistan and also reaffirmed India's commitment to the evolution of a global security architecture which will be open, transparent, inclusive, rules-based and anchored in international laws.

About the Collective Security Treaty Organisation (CSTO):

- The Collective Security Treaty Organization (CSTO) is a Russia-led military alliance of seven former Soviet states that was created in 2002.
- Often called the Eurasian counterpart of NATO, the CSTO's purpose is to ensure the collective defence of any member that faces external aggression.
- The organization supports arms sales and manufacturing as well as military training and exercises, making the CSTO the most important multilateral defence organization in the former Soviet Union.
- Members of CSTO:
 - Armenia
 - Belarus
 - Kazakhstan

Indra Navy – 20

About :

The 11th edition of exercise INDRA NAVY held between 4th and 5th September in the Bay of Bengal.

Details:

- Indra Navy is a biennial bilateral maritime exercise between the Indian Navy and the Russian Navy.
- Initiated in 2003, the exercise epitomises the long-term strategic relationship between the two Navies.
- The primary aim of exercise INDRA NAVY-20 is to further consolidate inter-operability built up by the two Navies over the years and also to enhance understanding and procedures for multi-faceted maritime operations.
- The scope of this edition includes wide-ranging and diverse activities across the spectrum of maritime operations.
- Due to restrictions imposed by the COVID-19 pandemic, INDRA NAVY-20 would be undertaken in a 'non-contact, at sea only' format.
- The exercise would involve surface and anti-aircraft drills, firing exercises, helicopter

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operations, seamanship evolutions, etc.

Ozone

About :

Low ozone over the Brahmaputra River Valley brings good news for the health of people.

Details:

- Scientists from Aryabhata Research Institute of Observational Sciences (ARIES), Nainital, evaluated the **near-surface ozone** in the Brahmaputra River Valley (BRV) and found a relatively low concentration of Ozone over Guwahati compared to the other urban locations in India.
- Researchers have found that the concentration of near-surface ozone in the Brahmaputra River Valley in the North-East corner of India is low compared to the other urban locations in India.

Ground-level Ozone:

- Tropospheric, or ground-level ozone, is created by chemical reactions between oxides of nitrogen (NOx) and volatile organic compounds (VOC).
- It usually increases when pollutants emitted by cars, power plants, industrial boilers, refineries, chemical plants, and other sources chemically react in the presence of sunlight, impacting human health.

There is a difference between what is called good ozone and bad ozone.

- The ozone found near the surface of the earth is considered bad because of its many adverse effects on human, animal and plant health.
- Good ozone is what is found in the stratosphere (which hosts the protective ozone layer). It is considered good since it absorbs the harmful UV rays from the Sun.

Chandrayaan – 1

About :

Images sent by Chandrayaan-1 indicate the possible impact of Earth's atmosphere on the Moon.

Details:

- ISRO's maiden mission to the Moon has sent images that show that the Moon may be rusting

along the poles.

- The sign of this finding is that even though the surface of the Moon is known to have iron-rich rocks, it is not known for the presence of water and oxygen, which are the two elements needed to interact with iron to create rust.
- Scientists at NASA say that this could be because the Earth's own atmosphere is lending a helping hand which, in other words, means that the Earth's atmosphere could be protecting the Moon as well.
- Thus, scientists are trying to decipher with Chandrayaan-1 data whether the Moon's poles are home to water.

Hypersonic Test Demonstration Vehicle

About :

DRDO successfully flight-tested the indigenously-developed hypersonic technology demonstration vehicle (HSTDV).

Details:

- With this test, India joins a select group of countries (like China, Russia, USA) having the capability to develop the next-generation hypersonic cruise missiles.
- The HSTDV, based on hypersonic propulsion technologies and developed by the Defence Research and Development Organisation (DRDO), will help India develop futuristic space assets like long-range missile systems and aerial platforms.
- The HSTDV is capable of powering missiles to attain a speed of around **Mach 6 or six times the speed of sound**.
- The successful test implies that the DRDO will have the capacity to develop a hypersonic missile with a scramjet engine in the next five years, which will have the capacity to travel at more than two kilometres per second.
- The HSTDV operates on a scramjet engine, as against the ramjet engine which is used on most missiles.
 - The ramjet engines operate at supersonic speeds of up to Mach 3.
- The DRDO conducted the test at the APJ Abdul Kalam testing range (Wheeler Island) in Balasore, Odisha.
- The HSTDV performed on all parameters, including combustion chamber pressure, air intake

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and control guidance.

- The HSTDV is an unmanned scramjet demonstration aircraft for hypersonic speed flight. Besides its utility for long-range cruise missiles of the future, the technology has multiple civilian applications also. It can be used for launching satellites at a low cost too.

Asset monetization of subsidiaries of Power Grid

About :

Cabinet approves asset monetization of subsidiaries of Power Grid Corporation of India Limited through infrastructure investment trust.

Details:

- The Cabinet Committee on Economic Affairs has approved the monetization of assets of POWERGRID, a Public Sector Undertaking (PSU) under the Ministry of Power, through the **Infrastructure Investment Trust (InvIT) model**.
- This is the first time any PSU in the power sector will undertake asset recycling by monetizing its assets through the InvIT model and use the proceeds to fund the new and under-construction capital projects.
- POWERGRID can now monetize transmission assets held in SPVs through InvIT model. The proceeds from the asset monetization would be utilized by POWERGRID for its CAPEX and the premium generated would augment the net worth of POWERGRID.
- In the first block, POWERGRID would monetize assets with a gross block of more than Rs7000 crore. Based on the experience gained, further monetization shall be carried out in the future.

Background:

- POWERGRID is a PSU under the administrative control of the Power Ministry.
 - It is a Maharatna company engaged in the business of power transmission.
 - POWERGRID started its commercial operations in 1992-93.
 - Through its subsidiaries, it owns and operates a pan India transmission network.
 - The company meets its fund requirement for its Capital Expenditure (CAPEX)

through its internal accruals and debt.

- The Budget 2019-20 emphasized investment-led growth and indicated that new and innovative financial instruments including Infrastructure Investment Trusts (InvITs), have been launched as part of the brownfield asset monetization strategy for augmenting infrastructure investment.

Benefits :

- Asset recycling is a key strategy of the Government of India to release the capital invested in operational assets and the proposed InvIT of POWERGRID would attract both domestic as well as global investors including Sovereign Wealth funds.
- Sale of assets to InvITs is a way of accessing long term, relatively cheap finance required to fund infrastructure projects in the transmission sector.
- The InvIT would provide an opportunity to the general public and institutional investors such as pension funds, mutual funds, to benefit from this investment opportunity and participate in the growth of the Indian infrastructure sector.

International Solar Alliance (ISA)

About :

Five Petroleum and Gas sector PSUs to join the International Solar Alliance.

Details:

- The move is significant as increasingly, Indian Oil & Gas companies are actively taking part in the clean energy transition.
- They are also making efforts to deploy solar panels across the value chain of their operations.
- The government has set a target of solarizing about 50% of fuel stations owned by public sector oil companies in the next five years.
- Five Public Sector Undertakings (PSUs) under the Petroleum & Natural Gas Ministry will be joining the International Solar Alliance (ISA)'s Coalition for Sustainable Climate Action (ISA-CSCA) as Corporate Partners.
- The five PSUs are Oil and Natural Gas Corporation Limited (ONGC), Indian Oil Corporation Limited (IOCL), Bharat Petroleum Corporation Limited (BPCL), Hindustan Petroleum Corporation Limited (HPCL) and GAIL (India) Limited.

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Village Poverty Reduction Plan

About :

Self Help Groups across the country being geared up to prepare the Village Poverty Reduction Plan for integration with the Gram Panchayat Development Plans.

Background:

- In 2015, the Fourteenth Finance Commission grants were devolved to GPs that provided them with an enormous opportunity to plan for their development themselves.
- Since then, local bodies across the country are expected to prepare context-specific, need-based Gram Panchayat Development Plans (GPDP).
- Article 243G of the Constitution intended to empower the Gram Panchayats (GPs) by enabling the State Governments to devolve powers and authority in respect of all 29 Subjects listed in the Eleventh Schedule for local planning and implementation of schemes for economic development and social justice.
- The local bodies (GPs) play a significant role in the effective implementation of flagship schemes on subjects of national importance, for the transformation of rural India.

Gram Panchayat Development Plans (GPDP):

- GPDP is conducted from October to December every year across the country, under the People's Plan Campaign (PPC).
- Since the last two years, self-help groups and their federations under the DAY-NRLM are expected to participate in the annual GPDP planning process and prepare the Village Poverty Reduction Plan (VPRP). This is as per the PPC guidelines and also as per a joint advisory issued by the ministries of Panchayati Raj and Rural Development.
- Gram Panchayat Development Plan (GPDP) brings together both the citizens and their elected representatives in the decentralized planning processes.
- GPDP is expected to reflect the development issues, perceived needs and priorities of the community, including that of the marginalized sections.
- Apart from the demand related to basic infrastructure and services, resource development and convergence of departmental schemes, GPDP has the potential to address the social issues as well.

What are Village Poverty Reduction Plans (VPRP)?

- VPRP is a comprehensive demand plan prepared by the Self Help Group (SHG) network and their federations for projecting their demands and local area development which needs to be integrated with the Gram Panchayat Development Plan (GPDP).
- The VPRP is presented in the Gram Sabha meetings.
- **Objectives of VPRP:**
 - Prepare a comprehensive and inclusive demand plan of the community for local development.
 - Facilitate an interface between the SHG federation and Panchayati Raj institutions for the development of demand plans.
 - Strengthen the community-based organisations and their leadership for active participation in poverty reduction activities.
- Demands under VPRP are categorized into five major components:
 - Social inclusion
 - Entitlement – to schemes like the MGNREGA, Ujjwala, ration cards, etc.
 - Livelihoods
 - Public goods and services
 - Resource development – demand for protection and development of natural resources like land, water, forest and other locally available resources
 - Social development

Jigyasa Programme

About :

Webinar on Scientific & Technological Interventions by CSIR-CMERI combating COVID-19 under Jigyasa programme.

About Jigyasa Programme:

- The focus of this scheme is on connecting school students and scientists so as to extend students' classroom learning with well-planned research laboratory-based learning.
- Student Residential Programmes, scientists as teachers and teachers as scientists, lab-specific activities/onsite experiments, visits of scientists to schools/outreach programmes, science and maths clubs, projects of National Children's Science Congress and tinkering laboratories are some of the activities included under the programme.
- It will also enable the students and teachers to

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pg. 10 Easy to PICK—"PIB Monthly Magazine September -2020

practically live the theoretical concepts taught in science by visiting CSIR laboratories and by participating in mini-science projects.

- It is a student – scientist connect programme.
- It is implemented by the Council of Scientific and Industrial Research (CSIR) in collaboration with Kendriya Vidyalaya Sangathan (KVS).

Schemes of Department of Social Justice & Empowerment

About :

Union Minister of Social Justice & Empowerment released Action Plan 2020-21 of all schemes of the Department of Social Justice & Empowerment.

Schemes under the Dept. of Social Justice & Empowerment

1. Free coaching for scheduled castes and other backward classes, national fellowship for scheduled castes & top class education for scheduled castes.
2. Pradhan Mantri Adarsh Gram Yojana – The Scheme aims at integrated development of villages in which the population of Scheduled Castes is above 50%.
3. National Action Plan on Drug Demand Reduction – read more on PIB dated Dec 3, 2019.
4. Integrated Programme for Rehabilitation of Beggars
5. National Action Plan for Senior Citizens
6. National Safai Karamcharis Finance & Development Corporation (NSKFDC)
 1. The Corporation has launched a new scheme with a view to promote mechanized cleaning and to minimize the incidents of Manual Hazardous cleaning, to providing financial assistance to its target group for procurement and operation of mechanized cleaning equipment under its Swachhta Udyami Yojna (SUY) with a provision of 50% capital subsidy for equipment costing up to Rs.5 Lakh.
 2. The NSKFDC functions under the Ministry of Social Justice & Empowerment, GOI.
7. Setting up a National Helpline against atrocities on members of SCs/STs with Web based self-service portal for generation of awareness and effective implementation of the PCR Act 1955 and the POA

Act 1989.

1. PCR Act 1955 – Protection of Civil Rights Act, 1955
2. POA Act 1989 – Prevention of Atrocities Act, 1989
8. Post-matric scholarships for SCs and Backward Classes.
9. VISVAS Yojana
 1. Vanchit Ikai Samooah aur Vargon ki Aarthik Sahayta Yojana (VISVAS) is for the benefit of Scheduled Castes and OBC Sel Help Groups/Individual member with annual family income up to Rs. 3 Lakh.
 2. Interest subvention on bank loans at 5% is available under the scheme.
 3. The scheme will be implemented by the National Scheduled Castes Finance Development Corporation (NSFDC) and National Backward Classes Finance and Development Corporation (NBCFDC).

National Science and Technology Entrepreneurship Development Board (NSTEDB)

About :

A report on the journey of the NSTEDB in catalyzing innovation, entrepreneurship, and incubation was launched by the Secretary, Department of Science and Technology (DST).

About NSTEDB:

- The NSTEDB was established in 1982 by the Government of India under the aegis of the DST.
- It is an institutional mechanism to help promote knowledge-driven and technology-intensive enterprises.
- The Board, having representations from socio-economic and scientific Ministries/Departments, aims to convert "job-seekers" into "job-generators" through Science & Technology (S&T) interventions.
- Its broad objective is to promote gainful self-employment amongst the Science and Technology (S&T) manpower in the country.

Objectives of NSTEDB:

- To promote knowledge-based and innovation-driven enterprises.
- To facilitate the generation of entrepreneurship

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pg. 11 Easy to PICK—"PIB Monthly Magazine September -2020

and self-employment opportunities for S&T persons.

- To facilitate information dissemination.
- To network with various Central & State Government agencies for S&T based entrepreneurship development.
- To act as a policy advisory body to the Government agencies for S&T based entrepreneurship development.
- To generate employment through technical skill development using S&T infrastructure.

The various institutional mechanisms under the Board include the following:

1. National Initiative for Developing and Harnessing Innovations (NIDHI)
2. NewGen Innovation and Entrepreneurship Development Centre (NewGen IEDC)
3. Science & Technology Entrepreneurship Development (STED) Project
4. Innovation – Science and Technology based Entrepreneurship Development (i-STED)
5. Science & Technology Entrepreneurs Park (STEP)
6. Technology Business Incubator (TBI)

Five Star Villages Scheme

About :

India Post launches Five Star Villages Scheme to ensure 100% rural coverage of postal schemes.

About Five Star Villages Scheme:

- The Department of Posts has launched a scheme called Five Star Villages, to ensure universal coverage of flagship postal schemes in rural areas of the country.
- The scheme seeks to bridge the gaps in public awareness and reach of postal products and services, especially in interior villages.
- All postal products and services will be made available and marketed and publicized at the village level, under the scheme.
- Branch offices will function as a one-stop-shop to cater to all post office-related needs of villagers.
- The schemes covered under the Five Star scheme include:
 - Savings Bank Accounts, Recurrent Deposit Accounts, NSC/KVP certificates
 - Sukanya Samridhi Accounts/PPF Accounts
 - Funded Post Office Savings Account

linked India Post Payments Bank Accounts

- Postal Life Insurance Policy/Rural Postal Life Insurance Policy Pradhan Mantri Suraksha Bima Yojana Account/Pradhan Mantri Jeevan Jyoti Bima Yojana Account.

- If a village attains universal coverage for the four schemes from the above list, then that village gets a four-star status; if a village completes three schemes, then that village gets a three-star status and so on.

How will the scheme be implemented?

- The scheme will be implemented by a team of five Gramin Dak Sevaks who will be assigned a village for the marketing of all products, savings and insurance schemes of the Department of Posts.
- This team will be headed by the Branch Post Master of the concerned Branch Office.
- The mail overseer will keep personal watch on the progress of the team on a daily basis.
- The teams will be led and monitored by the concerned Divisional Head, Assistant Superintendents Posts and Inspector Posts.
- The team of Gramin Dak Sevaks will conduct a door-to-door awareness campaign on all schemes, covering all eligible villagers.
- Wide publicity will be given by displaying the information on notice boards of Branch Offices.
- Prominent places of targeted villages like Panchayat Offices, schools, village dispensaries, bus depots, markets will also be used for advertising and pamphlets will be distributed.
- Small melas will be organized, considering COVID-19 safety guidelines.

COVID-19 Testing

About :

Health Ministry urges States/UTs to mandatorily retest all symptomatic negative cases of Rapid Antigen Tests through RT-PCR.

ICMR Guidelines:

- Both ICMR guidelines and the Union Health Ministry state that the following two specific categories of persons must necessarily be retested through RT-PCR tests:
 - All symptomatic (fever or cough or breathlessness) negative cases of Rapid Antigen Tests (RAT).

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- Asymptomatic negative cases of RAT that develop symptoms within 2 to 3 days of being tested negative.

Why retesting is necessary?

- The Ministry has noted that in some large states, symptomatic negative cases tested by Rapid Antigen Tests (RAT) are not being followed up by RT-PCR testing.
- According to the Ministry, this retesting is necessary to ensure that such symptomatic negative cases do not remain untested and do not spread the disease among their contacts.
- This will also ensure early detection and isolation/hospitalization of such false negatives.
- The Ministry has also reiterated that while the RAT is being used to increase access and availability of testing in the field, RT-PCR remains the gold standard of COVID tests.

Nine States:

- Recent data released by the Ministry show that more than 74% of the total active cases were in the nine most-affected states in the country.
- Maharashtra, Karnataka and Andhra Pradesh contribute 49% of the total active cases.

Streets for People Challenge

About :

The Ministry of Housing and Urban Affairs launched the Streets for People Challenge.

About the Streets for People Challenge:

- The Streets for People Challenge is an initiative of the Smart Cities Mission, Ministry of Housing and Urban Affairs (MoHUA), Government of India, to inspire cities to create walking-friendly streets through quick measures, in response to COVID-19.
- The Challenge aims to create flagship walking initiatives in cities that focus on placemaking and liveability.
- Cities will be required to reimagine their streets as public spaces through the lens of economic regeneration, safety, and child-friendly interventions, in order to ensure a green recovery from COVID-19.
- The knowledge partner of the challenge is the India Programme of the Institute for

Transportation and Development Policy (ITDP). The Fit India Mission also supports this challenge.

• Which cities can participate?

- The Streets for People Challenge is open to all cities under the Smart Cities Mission, capital cities of States/UTs and cities with a population of over 5 lakh population.
- The Challenge requires each city to test at least one flagship walking project and enhance liveability in one neighbourhood.
- Streets and public spaces around transit hubs, heritage zones, commercial streets, market areas, recreational corridors or any high footfall zones can be considered as potential locations for the flagship project. For cities under the Smart Cities Mission, the interventions will be a pan-city initiative.

Background:

- The pandemic has highlighted the importance of urban open spaces for recreation, mental health, and to enhance the liveability of a city.
- By placing health and economic recovery at the core of their interventions, cities have reallocated streets for pedestrians, while also allowing local businesses to reopen safely.
- In New York, the Open Streets: Restaurants programme has saved 80,000 jobs by allowing establishments to expand into sidewalks.
- Transport for London report shows that improving streets for walking and cycling can increase retail sales by up to a staggering 30%.

National Infrastructure Pipeline

About :

Secretary, Ministry of Road Transport & Highways, addresses investors' meet on Infrastructure Investment Trust(s) (InvIT).

Details:

- Road development is one of the most important components of the National Infrastructure Pipeline (NIP).
 - It contributes to over a quarter of the planned expenditure.
 - The expansion of roads is expected to give a boost to the economy by reducing logistic costs, connect hinterland to hubs, and cater to rapid growth in vehicle

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ownership.

- The InvIT will enable the National Highways Authority of India (NHAI) to monetize completed national highways that have a toll collection track record of at least one year.
- The InvIT is expected to be an attractive vehicle for mobilising funds for road development.

iRAD App

About :

The Ministry of Road Transport and Highways conducts training programme on the iRAD App.

What is iRAD App?

- iRAD stands for 'Integrated Road Accident Database' Project of the Ministry of Road Transport & Highways.
- The development and implementation of iRAD has been entrusted to IIT Madras and the National Informatics Centre Services, Inc.
- The app when developed and functional, will enable the stakeholders such as the Police, Transport, Health, etc. to use their mobile phones to collect accident data on the spot.
- Mobile app of iRAD is available for Android platform, and for other platforms like iOS, it will be available shortly according to the Ministry.
- Initially, the proposal will be implemented in six states, namely Maharashtra, Karnataka, Madhya Pradesh, Rajasthan, Uttar Pradesh and Tamil Nadu.
- Later, it will be expanded to cover the whole country.
- The project is proposed on an IT-based system for capturing the spot accident data using mobile app configured for this purpose.
- This data can then be utilised for various purposes like finding the cause of the accident and remedial measures to improve the road infrastructure, to record the accident data for the use of police, health services and other departments concerned.
- **Significance:** The project is significant as India accounts for about 5 lakh road accidents per annum in which about 1.5 lakh people die and another 3 lakh become disabled.

Krishna-Godavari (KG) basin

About :

Study shows that methane hydrate deposits located in the Krishna-Godavari (KG) basin are of biogenic origin.

Who conducted the Study?

- Researchers at the Agharkar Research Institute (ARI), an autonomous institute of the Department of Science and Technology, Govt. of India.

Background of the Study:

- The research team has identified the methanogens that produced the biogenic methane trapped as methane hydrate, which can be a significant source of energy.
 - Methane hydrate is formed when hydrogen-bonded water and methane gas come into contact at high pressures and low temperatures in oceans.
 - Methanogens are microorganisms that produce methane as a metabolic by-product in hypoxic conditions.
- Until recently, there have been only a few investigations of the methanogenic communities associated with methane hydrate-bearing sediments.
- This study has shown that methanogens under these elevated pressure and temperature conditions are well adapted to these conditions and are different in methane-producing activities.
- Understanding of these methane-producing methanogenic communities under such an extreme and pristine environment was very important.
- This study revealed maximum methanogenic diversity in the KG basin, which is one of the prominent reasons to confirm it to be the extreme source of biogenic methane in comparison to the Andaman and Mahanadi basins.

Significance of the Study:

- Methane is a clean and economical fuel. It is estimated that one cubic meter of methane hydrate contains 160-180 cubic meters of methane.
- Even the lowest estimate of methane present in the methane hydrates in KG Basin is twice that of all fossil fuel reserves available worldwide.

Krishna-Godavari Basin:

- An extensive deltaic plain formed by two large east coast rivers, Krishna and Godavari in the state of Andhra Pradesh and the adjoining areas of Bay of Bengal in which these rivers discharge their water is known as Krishna-Godavari Basin.

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- The KG Basin is a proven petroliferous basin of continental margin located on the east coast of India.
- Its on-land part covers an area of 15000 sq. km and the offshore part covers an area of 25,000 sq. km up to 1000 m isobath.
- The basin contains about 5 km thick sediments with several cycles of deposition, ranging in age from Late Carboniferous to Pleistocene.
- The major geomorphologic units of the basin are upland plains, coastal plains, recent flood and delta plains.
- The site is known for the D-6 block where Reliance Industries discovered the **biggest natural gas reserves in India** in 2003. The first gas discovery was made in 1983 by ONGC.
- The basin is home to the **Olive Ridley Sea Turtle** (IUCN) Status: Vulnerable).

Nano fertilizers

About :

IFFCO's Nano experiment.

What are Nano Fertilizers?

- Nano fertilizers are synthesized or modified form of traditional fertilizers, fertilizers bulk materials or extracted from different vegetative or reproductive parts of the plant by different chemical, physical, mechanical or biological methods with the help of nanotechnology used to improve soil fertility, productivity and quality of agricultural produce.
- The term 'nano fertilizer' is used for both materials of a physical diameter between 1 and 100 nm in at least one dimension (e.g., ZnO nanoparticles) and those existing at the bulk scale with more than 100 nm in size but that have been modified with nanoscale materials (e.g., bulk fertilizer coated with nanoparticles).

Background:

- Nanoscience and Nanotechnology research in agriculture and horticulture are still at an elementary stage but developing rapidly.
- Conventional bulk fertilizer or traditional fertilizers are not only expensive for the producer, but may be harmful to humans and the environment.
- This has led to the search for environmentally friendly fertilizers or smart fertilizer, mainly those

with high nutrient-use efficiency, and nanotechnology is rising as a promising alternative.

- The exceptional properties of nanoparticles, such as high surface area/volume size ratio and enhanced optoelectronic and physicochemical properties, compared to their bulk counterparts, are now emerging as a promising strategy to promote plant growth and productivity.

Advantages of Nano Fertilizers:

- Farmers or growers mainly apply conventional fertilizers through the soil by either surface broadcasting, subsurface placement, or as fertigation or with irrigation water. However, a large portion of applied fertilizers is lost to the atmosphere or enters water bodies, finally polluting our ecosystems.
- Nano fertilizers are required in a small amount which reduces the cost of transportation and field application.
- Their nutrient delivery system is slow or through a control release mechanism, this is associated with the covering or cementing of nutrients. By taking advantage of this slow nutrient delivery, growers can increase their crop growth because of consistently long-term delivery of nutrients to plants.
- The accumulation of salt in soil can be minimized as it is required in a small amount.
- They can be synthesized according to the nutrient requirements of planned crops.
- The miniature size, high specific surface area and high reactivity of nano fertilizers increase the bioavailability of nutrients.
- Providing balanced nutrition, nano fertilizers facilitate the crop plants to fight various biotic and abiotic stresses.

Concerns

However, there could be concerns associated with nano fertilizers as well. The properties of many nanoparticles are considered to be of potential risk to human health, viz., size, shape, solubility, crystal phase, type of material, and exposure and dosage concentrations. However, expert opinions indicate that food products containing nanoparticles available in the market are probably safe to eat, but this is an area that needs to be more actively investigated.

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Genomic sequences of SARS-CoV-2

About :

Scientists around the world including in India are working on genomic sequences of SARS-CoV-2.

Details:

- They have mainly found that 57 out of 64 SNPs are present in 6 coding regions of Indian SARS-CoV-2 genomes, and all are nonsynonymous in nature.
- The scientists are on the track to identify the genetic variability in SARS-CoV-2 genomes around the globe including India, find the number of virus strains using Single Nucleotide Polymorphism (SNP), spot the potential target proteins of the virus and human host based on Protein-Protein Interactions.
- Scientists are aiming to identify the genetic variability and potential molecular targets in virus and humans to find the best possible answer to combat the COVID-19
- A team of researchers at the National Institute of Technical Teachers' Training and Research, Kolkata have developed a web-based COVID Predictor to predict the sequence of viruses online on the basis of machine learning and analysed 566 Indian SARS-CoV-2 genomes to find the genetic variability in terms of point mutation and Single Nucleotide Polymorphism (SNP).
- The study is sponsored by the Science and Engineering Research Board (SERB), a statutory body under the Department of Science and Technology (DST).

Defence manufacturing

About :

The following initiatives have been taken by the government to promote 'Make in India' in defence.

- Defence Ministry has prepared a 'Negative List' of 101 items for which there would be an embargo on the import beyond the timeline indicated against them. This is expected to help the domestic industry fill the gaps in the sector for the Indian armed forces.
- A new category of capital procurement 'Buy {Indian-IDDMM (Indigenously Designed, Developed and Manufactured)}' has been introduced in Defence Procurement Procedure (DPP)-2016 to promote indigenous design and

development of defence equipment.

- The 'Make' Procedure of capital procurement has been simplified. There is a provision for funding of 90% of the development cost by the Government to the Indian industry under Make-I category. In addition, there are specific reservations for MSMEs under the 'Make' procedure.
- Separate procedure for 'Make-II' category (industry-funded) has been notified under DPP to encourage indigenous development and manufacture of defence equipment.
- An innovation ecosystem for Defence titled Innovations for Defence Excellence (iDEX) has been launched in April 2018. Read more on iDEX at PIB dated Nov 10, 2019.
- In 2019, the government had decided to set up two defence industrial corridors in Tamil Nadu and Uttar Pradesh respectively to serve as an engine of economic development and growth of defence industrial base in the country.
- An indigenization portal namely SRIJAN DEFENCE was launched in August 2020. Read more on SRIJAN portal in PIB dated Aug 14, 2020.
- Defence EXIM portal has been created for enhancing the ease of doing business and to streamline Export authorisation procedures.
- The 'Strategic Partnership (SP)' Model was notified in 2017 which envisages the establishment of long-term strategic partnerships with Indian entities through a transparent and competitive process, wherein they would tie-up with global Original Equipment Manufacturers (OEMs) to seek technology transfers to set up domestic manufacturing infrastructure and supply chains.
- India signed an agreement with Russia in September 2019 by which the after-sales support and operational availability of Russian origin equipment currently in service in the Indian Armed Forces would be enhanced by organizing the production of spares and components in the territory of India by Indian Industry by way of creation of Joint Ventures/Partnership with Russian Original Equipment Manufacturers (OEMs) under the framework of the "Make in India" initiative.
- Under the revised FDI policy of 2016, FDI in defence is allowed under automatic route up to 49% and beyond 49% through Government route.
- Defence Products list requiring Industrial Licences

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has been rationalised and the manufacture of most of the parts or components does not require Industrial License.

Mahanadi Water Disputes Tribunal 14sep

About :

Status of Mahanadi Tribunal.

Mahanadi Water Disputes Tribunal:

- The Mahanadi Tribunal was formed in 2018 to settle the inter-state water dispute between Odisha and Chhattisgarh with respect to sharing of the waters of the Mahanadi River.

What is the Dispute?

- The dispute between the two states over the Mahanadi originated when Odisha claimed that Chhattisgarh had "illegally" constructed several barrages across the river and its tributaries, which had seriously affected inflow into the Hirakud reservoir in Odisha, particularly in the non-monsoon seasons.
- What triggered the dispute was Odisha's allegation of reduced flow of water into the Hirakud.
- The location of the dam is problematic since although it is situated in Odisha, most of its catchment area (about 90%) lies in Chhattisgarh.
- The reservoir's main role is to moderate floods in the Mahanadi and hence, it has to remain empty for most of the monsoon season to be ready to accommodate excess water in times of need.
 - Apart from that, it also has an objective of ensuring flow in the Mahanadi to meet drinking water, ecological and other needs.
- The dam has a large direct irrigation command in the western parts of Odisha and a big indirect irrigation command in the deltaic areas in eastern parts of the state. It is one of the important generators of hydro-power in Odisha and a large supplier of water to industrial and urban demands.

(Source: DownToEarth Magazine)

About the Mahanadi River:

- It is a major river in East-Central India.
- It flows through the states of Madhya Pradesh, Chhattisgarh and Odisha.

- It forms a delta before flowing into the Bay of Bengal.
- The chief tributaries of Mahanadi are Seonath, Jonk, Hasdo, Mand, Ib, Ong, Tel, etc.

About the Hirakud Dam:

- Built across the Mahanadi, it is one of the first major multipurpose river valley projects started after India's independence.
- It was opened in 1957 and is one of the longest earthen dams in the world.
- It is located about 15 km from Sambalpur in Odisha.
- Debrigarh Wildlife Sanctuary is situated near the Hirakud Dam. It is notified as an Eco-Sensitive Zone by the Environment Ministry.

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