

# Learn Finite

Oct 2021



# PIB COMPLITATION PRELIMS 2022

Extra mile towards your preparation

For all competitive exam

AN INITIATIVE BY PRADEEP KUMAR  
(SOCIOLOGY EXPERT)

✉ [Info@learnfinite.com](mailto:Info@learnfinite.com)

☎ +91 9122234717

🌐 [www.learnfinite.com](http://www.learnfinite.com)

# 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

---

## Disclaimer

The Information, news and facts published in the magazine have been duly verified and cross-checked from original source before publishing. Even, if any information or fact is misinterpreted or found to have been published incorrectly, the publisher, editor or printer cannot be held responsible for any loss or damages accruing to any specific person or institution.

© **Copyright: Learn FINITE**, all rights Reserved. No part of this magazine may be reproduced, stored in a retrieval system or transmitted in any form by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of the publisher.

All Disputes would be subject to Delhi Jurisdiction Only.

## Team Learn FINITE

### Editor-in-Chief

Pradeep Kumar

### Advisory Board

Suraj Kumar Burnwal  
(Founder Learn FINITE)

Sachin Yogi  
Atal Tiwari

### Editorial Team

Mahesh  
Kamesh Mahto  
Sourav Sinha  
Anamika Kumari

### Marketing Team

Nishant Saxena  
Raj Burnwal  
Puja Shah

### Designing Team

Ankit Kumar  
Komal Gupta  
Deepak Burnwal

---

## Contact

Phone:

+91 9122234717

Email:

[info@learnfinite.com](mailto:info@learnfinite.com)

Web:

<https://learnfinite.com>

# Revise 450+ Days Current Affairs In Just 1 Week



₹  
299/-

Learn Bits  
20 Months Current Affairs

All Subject Covered Subject Wise Categorization Useful For Prelims As Well As Mains Special Focus On IR

Avail From  
01-04-2022

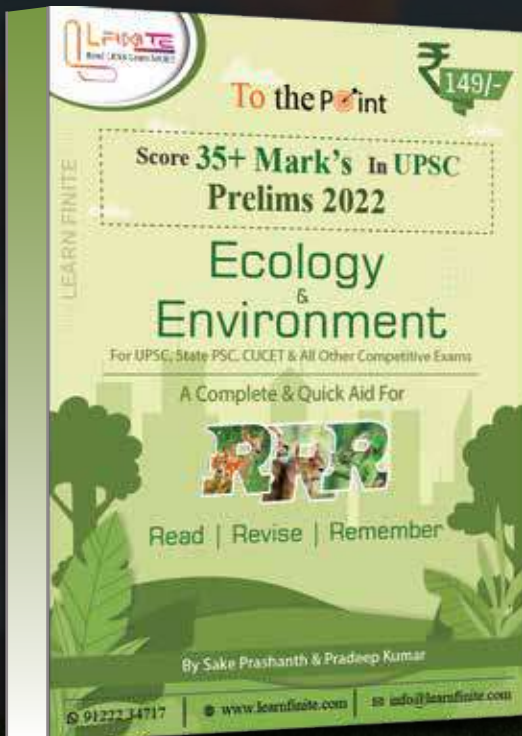
Jan. 2021 to Mar. 2022

Learn Bits quick supper of all CURRENT AFFAIRS  
You're read and revise tool for UPSC PRELIMS 2022

- \* All subjects of UPSC covered in single PDF
- \* Subject Wise categorization for organised study and revision
- \* Useful for Prelims as well as Mains as all facts and Important details are provided for value addition
- \* It covers all the authentic and important sources of current affairs such as PIB, The Hindu, Indian Express, Down to earth, Live Mint, economic times etc.
- \* Compiled by
- \* No repetition of article we do not follow the method of bombarding anything and everything available under the sun.
- \* Very precise and required information is provided which are relevant to exam

₹  
149/-

# Score 35+ Mark's In UPSC Prelims 2022 Environment & Ecology



For UPSC, State PSC, CUCET & All Other Competitive Exams

A Complete & Quick Aid For



Read  
Revise  
Remember

Salient Features:

- \* A crisp and quick aid for RRR to Read, Revise and Remember
- \* Covers all important and significant topics for exam
- \* Well structured to avoid confusion while reading
- \* UPSC bouncers can easily be tackled
- \* Prelims questions has been added
- \* Tabular Columns, Flow Charts, Diagrams And Maps used for lucid explanation

An Initiative By Pradeep Kumar

91222 34717

www.learnfinite.com

info@learnfinite.com



# Index

<b>HISTORY &amp; CULTURE.....</b>	<b>3</b>
WORLD HERITAGE SITE PLAQUE OF RAMAPPA TEMPLE UNVEILED .....	3
<b>POLITY &amp; GOVERNANCE .....</b>	<b>3</b>
ELECTRICITY RULES 2021.....	3
ENFORCEMENT OF MODEL CODE OF CONDUCT .....	4
TELEGRAPH RIGHT OF WAY (AMENDMENT) RULES, 2021.....	4
SAFETY PROVISIONS FOR A CHILD CARRIED ON A MOTOR CYCLE.....	5
<b>ECONOMY .....</b>	<b>5</b>
CENTRE DOUBLES INCENTIVE ON SUGAR SACRIFICED FOR PRODUCING ETHANOL.....	5
KAMDHENU DEEPAWALI 2021 CAMPAIGN .....	6
SEYCHELLES’ TAX INSPECTORS WITHOUT BORDERS (TIWB) PROGRAMME.....	7
PM MITRA .....	7
APEDA FLAGS OFF FIRST EXPORT CONSIGNMENT OF VALUE ADDED PRODUCTS.....	8
SUSTAINABILITY AND VALUE ADDED IN THE COTTON ECONOMY.....	8
NATIONAL DIGITAL LIVESTOCK MISSION BLUEPRINT .....	9
LAUNCH OF I-SPRINT’21.....	10
MULTI-MODAL LOGISTICS PARK (MMLP) .....	10
INDIA IS EXPORTING STRICTLY NON-GMO RICE TO WORLD.....	11
<b>SCIENCE &amp; TECH .....</b>	<b>11</b>
SUCCESSFUL FIELD TRIAL OF DRONE SPRAYING OF NANO UREA .....	11
I-DRONE .....	12
NEW BIODEGRADABLE POLYMER.....	12
SCALABLE SYNTHESIS METHOD DEVELOPED OF NANO-CRYSTALS .....	13
NEW COATING TECHNOLOGY (LCCT).....	14
INDIA AS BIO-MANUFACTURING HUB .....	14
TOXIC-FREE AND SUPERIOR MULTILAYER TECHNOLOGY .....	15
NOVEL COMPOSITE MATERIALS DEVELOPED .....	16
CLIMATE RESILIENCE INFORMATION SYSTEM AND PLANNING (CRISP-M).....	16
DEVELOPING NON-TOXIC ACTIVATED CARBON.....	17
AUTOMATED FUELLING TECHNOLOGY “UFILL” .....	17
FUTURE TECH 2021.....	18
COMBATING MASTITIS, AN AILMENT OF DAIRY CATTLE .....	18
INDIA’S FIRST BANNA BUFFALO IVF CALF BORN .....	19
NON-TOXIC SECURITY INK .....	19
SYNTHESIZING SILVER NANO-WIRES.....	20
<b>HEALTH &amp; MEDICINE .....</b>	<b>20</b>
PRODUCTION OF QUALITY PLANTING MATERIAL OF MEDICINAL PLANTS .....	20
<b>ECOLOGY &amp; ENVIRONMENT.....</b>	<b>21</b>
WETLANDS OF INDIA PORTAL.....	21
AEROSOL SOURCES IN CENTRAL HIMALAYAN REGION .....	21
GEOSPATIAL ENERGY MAP OF INDIA .....	22
AYUSH VAN.....	22
BIO-ECONOMIC HUB.....	23

<b>INTERNATIONAL RELATION.....</b>	<b>23</b>
SWARNIM VIJAY VARSH.....	23
3RD INDIA – UK ENERGY FOR GROWTH PARTNERSHIP.....	24
15TH INDIA-ISRAEL JOINT WORKING GROUP MEETING.....	24
GREEN GRIDS INITIATIVE-ONE SUN ONE WORLD.....	25
INTERNATIONAL YEAR OF FRUITS AND VEGETABLES.....	25
<b>SCHEMES &amp; POLICIES, SOCIAL ISSUES.....</b>	<b>26</b>
SWACHH BHARAT MISSION-URBAN 2.0 AND AMRUT 2.0.....	26
CHACHA CHAUDHARY DECLARED MASCOT FOR NAMAMI GANGE PROGRAMME.....	27
CABINET APPROVES AMRUT 2.0.....	27
NIPUN BHARAT MISSION.....	28
CII ASIA HEALTH 2021 SUMMIT.....	29
FIRST ‘ONE DISTRICT, ONE PRODUCT’ (ODOP) BRAND.....	29
<b>DEFENCE &amp; SECURITY.....</b>	<b>29</b>
INDO-NEPAL JOINT EXERCISE SURYA KIRAN XV.....	30
FIFTH EDITION OF ‘JIMEX’.....	30
EXERCISE AJEYA WARRIOR.....	30
JAPAN-INDIA BILATERAL MARITIME EXERCISE ‘JIMEX’.....	31
MULTILATERAL MARITIME EXERCISE MALABAR 2021.....	32
DR APJ ABDUL KALAM PRERANA STHAL.....	32
EXERCISE MITRA SHAKTI.....	33
WEB-BASED PROJECT MONITORING PORTAL FOR MILITARY ENGINEER SERVICES.....	33
ABHYAS SUCCESSFULLY FLIGHT-TESTED.....	34
INDO-PACIFIC REGIONAL DIALOGUE 2021.....	34
KONKAN SHAKTI 2021.....	35
INDIAN COAST GUARD SHIP ‘SARTHAK’ DEDICATED TO THE NATION.....	35
EX YUDH ABHYAS 2021.....	36
DRDO & IAF JOINTLY FLIGHT TEST LONG-RANGE BOMB SUCCESSFULLY.....	36
<b>MISCELLANEOUS.....</b>	<b>36</b>
STATE OF THE WORLD’S CHILDREN REPORT.....	36
EARTH GUARDIAN AWARD.....	37
NATIONAL APPRENTICESHIP MELA.....	37
HELI-BORNE SURVEY.....	38
INDIA POST LAUNCHES E-PLI BOND.....	39
NITI AAYOG’S ATAL INNOVATION MISSION DIGI-BOOK.....	39
WOMEN IN AGRI-STARTUPS.....	40
GANGA UTSAV 2021.....	40

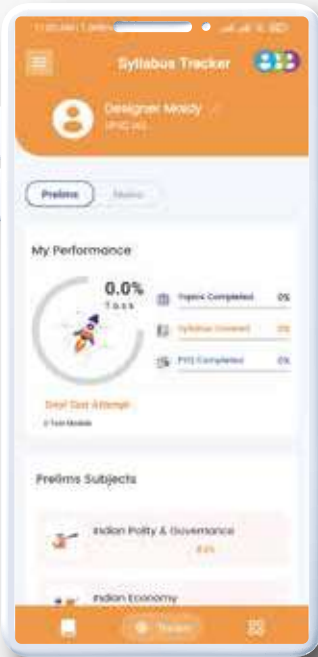
# LEARN FINITE



AI Driven Ed-Tech Platform

## Our Premium Features

# 1



## SYLLABUS TRACKER

Track Your Syllabus  
For UPSC Prelims  
2022

Track Your Studies With Us And Know Exactly  
What To Learn With Our Micro Topic Listing

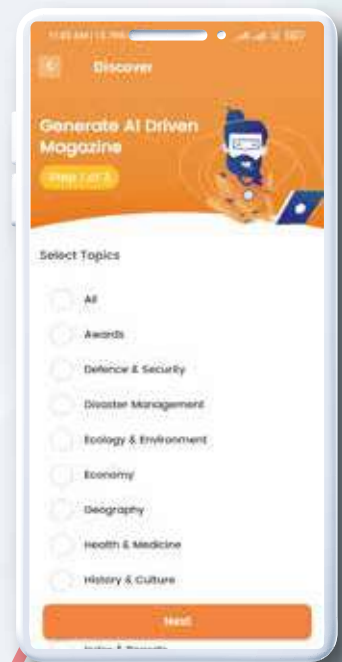
Left Helps You To Get Your Copy

## Customized Magazines

# 2

### UPSC Prelims 2021

- 1. Generate Your Customised Magazine
- 1. Wait Of Monthly Current Affairs Compilation Is Over
- 1. Instantly Get Your Copy With A Single Click



Download app From Play Store & App Store

© 91222 34717

www.learnfinite.com

info@learnfinite.com



# History & Culture

## World Heritage Site plaque of Ramappa Temple unveiled

### In news

The Union Minister for Culture, Tourism G. Kishan Reddy, unveiled the plaque of the World Heritage Site Inscription of the Ramappa Temple.

### About the Temple

- This inscription is a recognition of the ingenious brilliance and architectural prowess of the Great Kakatiyas.
- The Rudreshwara temple stands as a unique testimony to the highest level of creative, artistic and engineering talents involving various experimentations in expressive art forms of the Kakatiya period.”
- Rudreshwara, popularly known as Ramappa Temple, is located in the village of Palampet approximately 200km north-east of Hyderabad, in the State of Telangana.
- It is the main Shiva temple in a walled complex built during the Kakatiyan period (1123–1323 CE) under rulers Rudradeva and Recharla Rudra.
- Construction of the sandstone temple began in 1213 CE and is believed to have continued over some 40 years.
- The building features decorated beams and pillars of carved granite and dolerite with a distinctive and pyramidal Vimana (horizontally stepped tower) made of lightweight porous bricks, so-called ‘floating bricks’, which reduced the weight of the roof structures.
- The temple’s sculptures of high artistic quality illustrate regional dance customs and Kakatiyan culture.
- Located at the foothills of a forested area and amidst agricultural fields, close to the shores of the Ramappa Cheruvu, a Kakatiya-built water reservoir, the choice of setting for the edifice followed the ideology and practice sanctioned in dharmic texts that temples are to be constructed to form an integral part of a natural setting, including hills, forests, springs, streams, lakes, catchment areas, and agricultural lands.

# Polity & Governance

## Electricity Rules 2021

### In news

The Union Ministry of Power has promulgated the Electricity (Transmission System Planning, Development and Recovery of Inter-State Transmission Charges) Rules 2021.

### Details

- This paves the way for overhauling of transmission system planning, towards giving power sector utilities easier access to the electricity transmission network across the country.
- The rules underpin a system of transmission access which is termed as a **General Network Access** in the inter-state transmission system.
- This provides flexibility to the States as well as the generating stations to acquire, hold and transfer transmission capacity as per their requirements.

### Significance

Thus, the rules will bring in rationality, responsibility and fairness in the process of transmission planning as well as its costs.

### Changes

- In a major change from the present system of taking transmission access, power plants will not have to specify their target beneficiaries.
- The rules will also empower state power distribution and transmission companies to determine their transmission requirements and build them.
- Also, states will be able to purchase electricity from short term and medium term contracts and optimize their power purchase costs.
- Apart from introducing GNA, the rules also specify clear roles of various agencies involved in the transmission planning process.

## Enforcement of Model Code of Conduct

### In news

In this regard all political parties/candidates are advised not to organize any political activities directly related to the bye-elections even in the areas adjoining the district/constituency where the bye-election are being held.

### Details

- It has been brought to the notice of the Commission that certain political parties/candidates are organizing electioneering activities in the areas adjoining the district/constituency where the bye-election is being conducted.
- The District Election Officers concerned will ensure that the MCC instructions and COVID guidelines relating to the norms of social distancing are followed in the districts adjoining to the poll going district/constituency.
- The Model Code of Conduct for guidance of political parties and candidates is a set of norms which has been evolved with the consensus consensus of political parties who have consented to abide by the principles embodied in the said code and also binds them to respect and observe it in its letter and spirit.

### Objective Of the Code

- To create a level playing field for all the contesting candidates, political parties and other stakeholders.
- To ensure merit bases smooth campaign campaign.
- All parties and candidates to scrupulously avoid all activities which are “corrupt practices” and offences under the election law; use of muscle or money power; and for the ruling party, misuse of government resources to promote its party prospects.

## Telegraph Right of Way (Amendment) Rules, 2021

### In news

The Central Government has notified the Indian Telegraph Right of Way (Amendment) Rules, 2021 on 21<sup>st</sup>October 2021

### Details

- It has been done to incorporate the provisions related to nominal one-time compensation and uniform procedure for establishment of Overground Telegraph Line in the Indian Telegraph Right of Way Rules, 2016.



- The amount of one-time compensation for establishment of overground telegraph line will be maximum one thousand rupees per kilometre. Documentation for RoW application for overground telegraph line has been made simple.
- Also, there will be no fee other than Administrative fee and Restoration charges for establishing, maintaining, working, repairing, transferring or shifting the underground and over ground telegraph infrastructure.

### Significance

- These amendments will ease Right of Way related permission procedures for establishment and augmentation of Digital Communications Infrastructure across the country.
- With a robust pan India digital infrastructure, the digital divide between rural-urban and rich-poor will be bridged; e-governance and financial inclusion will be strengthened; doing business will be easy; information and communication needs of citizens and enterprises will be fulfilled; and ultimately the dream of India's transition to a digitally empowered economy and society will be translated into reality.

## Safety provisions for a child carried on a motor cycle

### In news

Section 129 of the Motor vehicles Act stands amended by the Motor Vehicles (Amendment) Act 2019

### Details

- The second proviso in the section is - "Provided Further that the Central Government may by rules provide for the measures for the safety of children below four years of age riding or being carried on a motor cycle".
- For children below four years, Safety harness shall be used for attaching the child to the driver of the motorcycle.
- The driver shall ensure that the child pillion passenger aged between 09 months and 4 years must wear his/her own crash helmet which fits his/her head or wear bicycle helmet
- The speed of the motorcycle with the child upto age 4 years being carried as a pillion, shall not be more than 40 kmph.

## Economy

### Centre doubles incentive on sugar sacrificed for producing ethanol

### In news

With a view to encourage sugar mills to divert excess sugar cane / sugar to ethanol & to achieve targets of blending ethanol with petrol in line with Ethanol Blended with Petrol program, incentive on sugar sacrificed for producing ethanol from B-heavy molasses/sugarcane juice/sugar syrup/sugar has been doubled from October 2021, onwards in their monthly release quota.

### Issue

- It is pertinent to mention here that in every sugar season (October-September), production of sugar is around 320-330 Lakh Metric Tonne (LMT) as against the domestic consumption of 260 LMT which results in huge carry over stock of sugar with mills.

- Due to excess availability of sugar in the country, the ex-mill prices of sugar remain subdued resulting in cash loss to sugar mills.
- This excess stock of 60 LMT also leads to blockage of funds & affects the liquidity of sugar mills resulting in accumulation of cane price arrears.

### Solution

- With a view to prevent cash loss to sugar mills caused due to subdued sugar prices, Government in June, 2018 has introduced the concept of Minimum Selling Price (MSP) of sugar & fixed MSP of sugar at Rs. 29/ kg which was revised to Rs. 31/ kg w.e.f 14.02.2019.
- Now, those sugar mills, which will be diverting sugar to ethanol, would be getting the entire quantity of sugar sacrificed on producing ethanol from B-heavy molasses/sugarcane juice/sugar syrup/sugar in their monthly release quota.
- The Centre is taking several steps for diversion of sugar to ethanol. In order to find a permanent solution to address the problem of excess sugar, Government is encouraging sugar mills to divert excess sugarcane to ethanol.
- Government has fixed target of 10% blending of fuel grade ethanol with petrol by 2022 & 20% blending by 2025.

### Impact

- It would benefit maize & paddy farmers, would address surplus grain problem; about 165 lakh tons of grains will be utilized.
- Diversion of 60 lakh tons of surplus sugar would address the problem of surplus sugar, checks depressed sale of sugar, improves liquidity of sugar mills and will ensure timely payment of cane dues of farmers
- It will bring new investment opportunities as about Rs.41, 000crore would be invested to set up new distilleries in rural areas & would result in job creation in villages.
- Would improve air quality, reduces Carbon Monoxide emission by 30-50% & Hydrocarbon by 20%.
- Would save foreign exchange of about Rs. 30000 cr on account of crude oil import bill and would reduce dependence on imported fossil fuel thereby would help in achieving the goal of Atmanirbhar Bharat in petroleum sector.

## Kamdhenu Deepawali 2021 campaign

### In news

Kamdhenu Deepawali campaign launched to promote Cow Entrepreneurship and Cow based Panchgavya products.

### Details

- Special Cow dung based lamps are being made for Kamdhenu Deepawali.
- Government will provide full support to Kamdhenu Deepawali, Each Gashala should be made Self Sustainable.
- Kamdhenu Deepawali is to make Cows to be economically useful by proper economic use of Cow Dung and Cow Urine too along with its Milks, Curd, Ghee.
- More than 300 items are getting made now by Panchgavya from Cow.
- This includes Deepawali items too like – Deepak, Lamps, Candles, Sambrani cup, Havansamagri, Dhoopbatti, incense sticks, Hard board, Wall piece, Laxmi-Ganesh idols etc made up of Cow dung.

### Significance

- Last year Crores of Cow dung Deepak, lamps were manufactured across India.
- Rashtriya Kamdhenu Aayog provided training along with many Volunteer organizations across India.

- This gave rise to large number of Cow dung based Start Ups.
- This time the campaign is committed to take the initiative to higher levels. Cow Entrepreneurs across India will get benefitted by this campaign.
- This Eco friendly campaign will also help Gaushalas to become Self Sustainable. This will empower Prime Minister's vision of 'StartUp India', 'Aatmnirbhar Bharat' too.

## Seychelles' Tax Inspectors Without Borders (TIWB) programme

### In news

Tax Inspectors Without Borders (TIWB), a joint initiative of the United Nations Development Programme (UNDP) and the Organisation for Economic Cooperation and Development (OECD), launched its programme in Seychelles on 4th October, 2021.

### Details

- India was chosen as the Partner Administration and has provided Tax Expert for this programme.
- This programme is expected to be of 12 months duration during which India, in collaboration with the TIWB Secretariat and support of the UNDP Country Office in Mauritius and Seychelles.
- It aims to aid Seychelles in strengthening its tax administration by transferring technical know-how and skills to its tax auditors through sharing of best audit practices.
- The focus of the programme will be on Transfer Pricing cases of tourism and financial services sectors.
- ***This programme is the sixth TIWB programme which India has supported by providing Tax Expert.***

### Tax Inspectors Without Borders

The TIWB Initiative is a strong response to the attention given to effective and efficient mobilisation of domestic resources in achieving the Sustainable Development Goals and the commitments made by the international community in Addis Ababa to strengthen international tax co-operation.

## PM MITRA

### In news

To position India strongly on the Global textiles map, the Government has approved the setting up of 7 PM MITRA (पीएम मित्र) parks as announced in Union Budget for 2021-22.

### Details

- PM MITRA (पीएम मित्र) is inspired by the 5F vision of Hon'ble Prime Minister.
- The '5F' Formula encompasses - Farm to fibre; fibre to factory; factory to fashion; fashion to foreign.
- This integrated vision will help furthering the growth of textile sector in the economy.
- No other competing nation has a complete textile ecosystem like us. India is strong in all five Fs.
- The 7 Mega Integrated Textile Region and Apparel Parks (PM MITRA) (पीएम मित्र) will be setup at Greenfield / Brownfield sites located in different willing States.

### Key feature

- Core Infrastructure: Incubation Centre & Plug & Play facility, Developed Factory Sites, Roads, Power, Water and Waste Water system, Common Processing House & CETP and other related facilities e.g. Design Centre, Testing Centres etc.
- Support Infrastructure: Workers' hostels & housing, logistics park, warehousing, medical, training & skill development facilities

PM MITRA (पीएम मित्र) will develop 50% Area for pure Manufacturing Activity, 20% area for utilities, and 10% of area for commercial development.

### Significance

- Convergence with other Central Government and State Government Schemes is available as per their eligibility under the guidelines of those schemes.
- This will enhance the competitiveness of the textiles industry, by helping it in achieving economies of scale and will create huge job opportunities for millions of people.
- Leveraging Economies of Scale, the scheme will help Indian companies to emerge as Global Champions.

## APEDA flags off first export consignment of value added products

### In news

The Agricultural and Processed Food Products Export Development Authority (APEDA) facilitated exports of the first consignment of various value-added and nutri-rich products derived from Jackfruit, Passion fruit and Nutmeg (Jaiphal) sourced from farmers in Thrissur, Kerala, to Melbourne, Australia.

### Details

- These products have a shelf life of more than one year.
- APEDA is promoting exports of value-added and health products as part of the Prime Minister Shri Narendra Modi's aim for achieving \$ 400 billion merchandise exports by 2021-22.
- In the current fast-food era, consumers' preference is shifting towards health food.
- The gluten free products prepared from healthy options like Jackfruit, Passion fruit etc are providing a viable alternative against the consumption of fast food.
- The major export destinations of Jackfruit are Singapore, Nepal, Qatar, Germany etc.

### About the fruits

#### Jackfruit

- It originated in Western Ghats, was declared the state fruit of Kerala in March, 2018.
- The largest tree borne fruit is dense in fiber, protein, vitamins and minerals.
- The tropical fruit is the popular meat substitute among vegans due to its protein content.
- In addition to the use of fruit, seed and pulp, Jackfruit leaves, bark, inflorescence and latex are used in traditional medicines too.
- With the growing awareness of health and nutritional properties of the fruit and sustained efforts of Jackfruit farmers and entrepreneurs across the country, it is anticipated that the Jackfruit will definitely become the most sought-after fruit in the coming years.
- The major export destinations of Jackfruit are Singapore, Nepal, Qatar, Germany etc.

#### Passion fruit

- It is a nutritious tropical fruit rich in antioxidants, vitamins and fiber.
- It is a beneficial fruit with a healthful nutrition profile important for skin, vision & immune system.

Because of the richness, massive market potential, and unlimited number of benefits that these fruits provide, there are huge opportunities for expanding exports of with its innovative products.

## Sustainability and Value Added in the Cotton Economy

### In news

An MOU was signed between Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and the Ministry of



Textiles Govt. of India on Implementation Agreement of Indo German Technical Cooperation Project on 'Sustainability and Value Added in the Cotton Economy'.

### Objective

The objective of the project is 'to increase the value addition from sustainable cotton production in India by focusing on sustainable cotton, and strengthening of downstream processing'.

### Details

- It is focussing on 4 majorly cotton producing states- Maharashtra, Gujarat, Madhya Pradesh and Tamil Nadu and will work closely with them and the related agencies.
- The GIZ project is aimed at increasing volume of cotton production at least on 90,000 hac with participation of 1.50 lakh cotton farmers with yield increase by 10%.
- India is the largest cotton producer in the world and also the 2nd largest consumer of cotton in the world.
- The project follows "**From shelf to field**" approach, with the strategy to link consumers to the cotton growers in India and work along the entire supply chain.
- The project is also focusing on creation and promotion of transparency about the prevalence and application of internationally recognized/accepted sustainability standards and promoting measures that reduce the water footprint in cotton production.
- This will help reduce vulnerability of cotton sector to ever-increasing water-stress worsened by climate vagaries.

### Significance

- This will enable capacity building of the 1.50 lakh farmers& entrepreneurs of which about 30% will be women beneficiaries.
- The GIZ project will also help in enhancing employment and women empowerment in training and capacity building on sustainable cotton growing practices by innovation in new cotton processing procedures and ginning etc.

## National Digital Livestock Mission Blueprint

### In news

Union Minister of State for Fisheries, Animal Husbandry & Dairying unveils National Digital Livestock Mission Blueprint at NDDB.

### Aim

The aim is to create a farmer-centric, technology-enabled ecosystem where the farmers are able to realize better income through livestock activities with the right information.

### Details

- NDLM will be the unique identification of all livestock, which will be the foundation for all the state and national level programmes including domestic and international trade.
- The farmers will be able to effortlessly access the markets, irrespective of their location or holdings through this digital platform as a wide-range of stake-holders will be connected in this ecosystem.
- This system will also include robust animal breeding systems, nutrition, disease surveillance, disease control programmes and a traceability mechanism for animals and animal products.
- The farmers in their own field primarily use the bio slurry produced and surplus bio slurry gets sold to other farmers or converted in to organic fertilisers.

- Genetic improvement and raising productivity of the Indian bovine population remained the key focus when the Honble Union Minister visited NDDDB's modern Ovum Pick Up & In Vitro Embryo Production (OPU-IVEP) facility.

### National Livestock Mission

- National Livestock Mission is an initiative of the Ministry of Agriculture and Farmers' Welfare.
- The mission, which commenced from 2014-15, has the objective of sustainable development of the livestock sector.
- NABARD is the subsidy channelizing agency for following schemes, under Entrepreneurship Development & Employment Generation (EDEG) component of National Livestock Mission.
- Poultry Venture Capital Fund (PVCF)
- Integrated Development of Small Ruminants and Rabbit (IDSRR)
- Pig Development (PD)
- Salvaging and Rearing of Male Buffalo Calves (SRMBC)
- Effective Animal Waste Management
- Construction of Storage Facility for Feed and Fodder

### Launch of I-Sprint'21

#### In news

International Financial Services Centres Authority (IFSCA) and GIFT City launched I-Sprint'21, the global FinTech Hackathon Series of IFSCA on 7<sup>th</sup> October 2021.

#### The aim of the Hackathon

- To connect IFSCA and GIFT IFSC with FinTech Ecosystem
- To solve Business Problems for the Banking Units at GIFT IFSC and
- To promote retail business for the Banking Units at GIFT IFSC.

### International Financial Services Centres Authority

- The IFSCA is a unified authority for the development and regulation of financial products, financial services and financial institutions in the International Financial Services Centres (IFSCs) in India.
- IFSCA endeavours to encourage the promotion of financial technologies ('FinTech') initiatives across the spectrum of banking, insurance, securities and fund management in IFSC. I
- The first Sprint of the series "Sprint01: BankTech" is focussed on FinTechs for the Banking sector.
- World Class FinTech Hub" at GIFT IFSC, IFSCA had introduced a framework for "Regulatory Sandbox" in October 2020 which allows the FinTech entities to have facilities and flexibilities to experiment with innovative FinTech solutions in a live environment with a limited set of real customers for a limited time frame.
- The finalists of this Hackathon shall be allowed direct entry into IFSCA Regulatory/Innovation Sandbox.

### Multi-Modal Logistics Park (MMLP)

#### In news

Union Minister for Ports, Shipping and Waterways has announced forming of a Special Purpose vehicle (SPV) for development of a Multimodal Logistics Park (MMLP) at VOC Port in Chennai.

## Details

- The MMLP to be developed through Public Private Partnership with the SPV providing land and connectivity and the actual MMLP infrastructure to be developed by a private developer.
- The economic engine of South Tamilnadu, has proposed for setting up of Multimodal Logistics Park due to its advantages such as excellent Rail-road connectivity, proximity to Main Sea Route, all weather operational conditions, and geographic position to link Eastern coast with the Western coast.

## Utility

- The Multimodal Logistics Park would facilitate infrastructure for enabling seamless multimodal freight transfer, and specialized storage solutions, such as cold storage, warehouses equipped with mechanized material handling and intermodal transfer terminals for containers, bulk and break-bulk cargo.
- MMLP would be offering value-added services such as Customs clearance, bonded storage yards, quarantine zones, testing facilities, warehousing management services, post-manufacturing activities such as kitting and final assembly, grading, sorting, labelling, packaging etc.

## India is exporting strictly Non-GMO rice to World

### In news

India was exporting strictly Non-GMO rice to the world and there was no commercial variety of GM (Genetically Modified) rice in India.

### Allegation

A news report was found regarding food recall linked to alleged GM rice from India.

### Clarification

- There is no commercial variety of GM rice in India, in fact the commercial GM cultivation of rice is banned in India.
- There is no question of export of GM rice from India.
- The broken white rice exported from India which is allegedly one of the possibilities has passed through many hands before reaching to the actual processors in EU.
- The exporter has confirmed that the rice exported was Non-GMO and there is hardly any possibility of cross contamination even during inland transit as the final sample was drawn at the port of loading by an independent inspection agency having the International recognition who after due to testing and verification issued Non GMO certificate before shipment.

## Science & Tech

### Successful field trial of Drone spraying of Nano Urea

#### In news

India has become the first country in the world to start commercial production of Nano Urea.

#### Details

- A practical field trial of Drone Spraying of Nano Liquid Urea was conducted in Bhavnagar, Gujarat, the trial was attended by a large number of farmers.

- This demonstration of spraying liquid nano urea by drone was undertaken by IFFCO, a company involved in developing nano urea.

### Benefits

- Drones will be able to spray more land in less time.
- This will save the time of the farmers.
- The cost of spraying will be less.
- This will result in financial savings to the farmers.
- Along with this, the safety of the sprinklers will also be ensured.
- ***This will also reduce the subsidy burden on the government and the government will be able to use this savings on other public welfare schemes.***

## i-Drone

### In news

Union Minister for Health and Family Welfare launched ICMR's Drone Response and Outreach in North East (i-Drone).

### Details

- This is a delivery model to make sure that life-saving vaccines reach everyone.
- This is for the first time that a 'Make in India' drone has been used in South Asia to transport COVID vaccine over an aerial distance of 15 kms in 12-15 mins from the Bishnupur district hospital to Loktak lake,
- Karang island in Manipur for administration at the PHC. The actual road distance between these locations is 26 km.
- This technology may prove a game changer in addressing the challenges in health care delivery, particularly health supplies in difficult areas.

### Drone delivery system

- The vaccine delivery among tough and hard-to-reach terrains of India is still challenging.
- This i-Drone has been designed to overcome these challenges by deploying Unmanned Aerial vehicles (UAV) / drones to remote areas and hard to reach terrains.
- Currently, the drone based delivery project has been granted permission for implementation in Manipur and Nagaland, as well as union territory of Andaman and Nicobar Island.

## New biodegradable polymer

### In news

A team of Indian scientists has developed an environmentally friendly, non-toxic, biodegradable polymer using guar gum and chitosan, both of which are polysaccharides extracted from guar beans and shells of crab and shrimps.

### Details

- The fabricated guar gum-chitosan film having high water stability, high mechanical strength, and excellent resistance to harsh environmental conditions can potentially be used in packaging applications.
- Polysaccharide is one of the biopolymers with high potential for use in synthesis of packaging material.
- The superior mechanical strength, water repellent properties, and resistance to harsh environmental conditions of the fabricated cross-linked guar gum-chitosan increase its potential of being used in packaging applications.



## Challenges

Due to some drawbacks of polysaccharides, such as low mechanical properties, high water-solubility, and low barrier properties, they are not preferred.

## Solution

- In order to overcome these challenges of polysaccharide, Dr. Devasish Chowdhury, Associate Professor, and Sazzadur Rahman, Inspire Junior Research Fellow, fabricated a guar gum-chitosan composite film which is a cross-linked polysaccharide without using any plasticizer with the help of a method called the solution casting method (a simple technique to make polymer films).
- The fabricated biopolymer composite film had high water stability, high mechanical strength, and excellent resistance to harsh environmental conditions.

## Findings of research

- The researchers found that the fabricated crosslinked film did not dissolve in water even after 240 hours.
- In addition, the mechanical strength of crosslinked guar gum-chitosan composite film was higher compared to general biopolymer (Biopolymer are known to possess poor strength).
- The cross-linked guar gum-chitosan composite film was also highly water repellent or hydrophobic due to its high contact angle of 92.8°.
- It had low water vapor permeability when compared with the film made only from chitosan.

## Scalable synthesis method developed of Nano-crystals

### In news

Indian researchers have developed a method that can help large scale synthesis of a special class of semiconductor nanocrystals.

### Details

- These nanocrystals called two-dimensional layered perovskite and perovskite nanocrystals, which have bright emission colours and are not affected by or corroded by the environment, are useful for both high colour purity and low-cost solution processability.
- Nanomaterials have unique properties compared to their bulk counterpart as they exhibit bright emission and are useful for light-emitting diodes (LED) apart from several other applications in our day-to-day life.
- However, large-scale syntheses of such materials are challenging as the reaction mechanism, and kinetics of large-scale syntheses are often different from small-scale syntheses.
- Such large scale synthesis methods are necessary for industrial applications.

### The process of synthesis

- A group of researchers at the Centre for Nano and Soft Matter Sciences (CeNS), an autonomous research institute under the Department of Science and Technology (DST), has synthesized two-dimensional layered perovskite and perovskite nanocrystals by a method called sonochemical process that is often used for large scale synthesis.
- This process utilizes the principles of sonochemistry to make molecules undergo a chemical reaction with the application of powerful ultrasound radiation.

### Findings

- The team tracked how these nanomaterials grow during the reaction.
- They controlled reaction parameters, such as time and temperature, to tune the dimensionality of these nanomaterials and their emission colours.

- The researchers showed that at an early stage of reaction, two-dimensional layered perovskites form, and they get converted to perovskite nanocrystals controllably.
- They also demonstrated a white-light-emitting diode with the mixture of these perovskites.
- Further works are in progress by the CeNS team to increase the stability of these nanomaterials.

## New coating technology (LCCT)

### In news

Indian Scientists have developed a unique laser-based clad coating technology (LCCT) that provides improved protection to the boiler parts in thermal power plants.

### Issues faced earlier

- In advanced supercritical and ultra-supercritical thermal power plants, various parts of the boiler and its accessories such as feeder nozzle tip, re-heater boiler tube bends, burner spreaders often degrade due to severe wear and corrosion at high temperatures and thereby requiring frequent replacements during breakdown and maintenance schedules.
- Shutdown due to such problems severely affects power production in the ever-increasing demand of today's technologically advanced world. Failure of such components during the running period of the plant makes the job of breakdown maintenance challenging and cumbersome due to the prevailing high temperature and dust enveloped conditions and a massive loss in power production in coal-fired power plants.

### Solution

- The LCCT has been developed with a meticulous fusing of a Nickel-based soft matrix with hard metallic carbide particles of (tungsten, chromium, or vanadium) on steel parts by employing a high-power laser integrated into a multi-axis robot with process monitoring and control.
- The control of the microstructure of the coating with manipulation of laser-heat for precise melting of hard carbide particles in the evenly distributed soft matrix under controlled dilution enabled this unique LCCT suitable for boiler parts of thermal power plant as well as engineering applications involving high temperature erosive and corrosive environment.

### Significance

- It can enhance life of boiler parts by 2- 3 times compared to currently use surfacing technologies.
- This process allows for property improvements of the surface of a part, including better wear resistance thus allowing for the repair of damaged or worn surfaces.

### Working

- It has been found that this technology is suitable, not only for boiler parts of thermal power plants but also for any engineering application involving high temperature erosive and corrosive environment.
- Laser cladding is a technique for fusing a coating material on a substrate. It allows materials to be deposited accurately, selectively, and with minimal heat input into the underlying substrate.

## India as Bio-manufacturing Hub

### In news

Union Minister Dr Jitendra Singh says, India will be within the top 5 countries Globally and be recognized as a Global Bio-manufacturing Hub by 2025.

## Details

- India's Bio-Economy is on way to achieve 150-billion-dollar target from the current 70 billion-dollar to contribute effectively to Prime Minister's vision of a 5 trillion-dollar economy by 2024-25.
- The minister released genetic Version of Indian rice and chickpea developed by National Institute of Plant Genome Research (NIPGR).
- These two crops and will tap the huge potential of Indian plant biodiversity and genomic diversity towards food and nutritional security of the Nation.
- Along with the other research platforms established by DBT in this institute, such as, the National Genomics and Genotyping Facility (NGGF), State of the Art Advanced Proteomics and Metabolomics Platforms and Plant Transformation Platforms, this Translational Facility and the Chips will tap the huge potential of Indian agricultural biodiversity towards achieving the goals of the National mission programs and SDG zero hunger goal.
- Speed breeding technique shortens the breeding cycle by promoting quick growth and development and rapid generation advancement (even up to 4-6 generations per year) of crop plants.

## Germplasm

It's characterisation in major crop species, Developing high yielding, Climate-resilient, Disease resistant and Nutrient-rich crops towards the second green revolution, Applying gene editing technology for improving crop varieties, One Health Mission on AMR for livestock and zoonotic Diseases, National Nutrition Mission on Fortified and Functional Foods, Phytopharma Mission for development of affordable phyto-pharmaceutical drugs and Mission on Waste to Value Technologies.

## Toxic-free and superior multilayer technology

### In news

Indian Scientists have indigenously developed toxic-free and superior multilayer technology that packages together electronic components like resistors, capacitors to produce multilayer circuits.

### Details of new technology

- These technologies, known as Low-Temperature Cofired Ceramic (LTCC) and High-Temperature Cofired Ceramic HTCC substrates with applications as satellite communication components, are currently being imported in India.
- The indigenous development can plug the money drain through import substitution and support the country's strategic sectors.
- Low orbit satellites satellite systems, which are in demand today, need a sustainable technology supporting reduced satellite volume and mass, besides reduced production time and affordable cost.
- Hybrid microsystems based on LTCC technology (integration of passive components, such as a capacitor, resistor, inductor, resonator and filter, etc., into a multilayered ceramic module) is an interesting solution in future communication satellites due to their outstanding performance and moderate cost.
- Currently, the LTCC products are being imported from vendors like DuPont, Ferro etc., and hence country's revenue is getting drained owing to the exorbitant price of these products.
- They have dielectric properties or the ability of storing electric energy in an electric field that are comparable to the commercial tapes, whereas thermal conductivity is better than them.
- An aqueous tape casting technique has been developed, which is relatively health hazard free since it does not employ volatile organic components like xylene and methyl ethyl ketone.
- The technology developed is a glass-free LTCC tape casting composition, which can address the brutality issues of tapes.

## Application

These tapes find application in various satellite communication components at the Space Application Centre, Ahmedabad (ISRO), which require thousands of microwave substrates every year as also in Defence Research laboratories and BHEL.

## Novel composite materials developed

### In news

Indian researchers have developed a thermally stable solid electrolyte for lithium-ion batteries for energy storage that promise application for a wide range of temperatures from 30-500 degrees Celsius.

### Details

- Energy generation and storage is the need of the hour, and worldwide efforts are being invested for developing cost-effective, efficient options.
- The current state of art indicates a possible replacement of conventional low energy density, low shelf life batteries with Lithium-ion and Sodium-ion batteries.
- A group of researchers have developed solid-state energy storage devices in the form of thermally stable solid electrolytes for Li+ ion batteries and supercapacitors and tested their stability and efficiency using state of the art facilities.

### Research & result

- The team has used DST FIST-supported High-temperature X-ray diffraction (HTXRD) facility Rigaku SmartLab, particularly useful for the thermal stability assessment of novel solid electrolytes.
- The XRD patterns were obtained in situ up to 500°C.
- Now, the batteries and supercapacitors to operate at high temperatures are being developed.
- The results from HTXRD patterns (technique used to study the structural changes in the material as a function of temperature) for the range 30-500 °C for the ionic liquid (IL) dispersed sol-gel derived NASICON(superionic sodium conductors) structured  $\text{LiTi}_2(\text{PO}_4)_3$  (LTP) composites indicated that IL does not react with LTP at higher temperatures to form unwanted compound.
- The composite was used in Lithium button cells.
- Excellent stability has been achieved under battery conditions. The composite promises battery application for a wide range of temperature.

## Climate Resilience Information System and Planning (CRISP-M)

### In news

Union Minister of Rural Development & Panchayati Raj jointly launched Climate Resilience Information System and Planning (CRISP-M) tool for integration of climate information in Geographic Information System (GIS) based watershed planning under Mahatma Gandhi NREGA.

### Significance

- CRISP-M tool will help embed climate information in the GIS based planning and implementation of Mahatma Gandhi NREGS.
- The implementation of CRISP-M will open up new possibilities for rural communities to deal with the issues of climate change.
- This tool will be used in seven states where in the Foreign Commonwealth and Development Office (FCDO), Government of UK and Ministry of Rural Development, Government of India are jointly working towards climate resilience.



- The states are Bihar, Jharkhand, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Odisha and Rajasthan.
- ***The tool has already been successfully piloted in 18 village panchayats of Niwali Block in Badwani, Madhya Pradesh, and CRISP-M shows the value of combining scientific climate risk information, methods, practices and technology with the traditional knowledge, practices and skills of communities.***

## Developing non-toxic activated carbon

### In news

A team of scientists have used tea and banana waste to prepare non-toxic activated carbon, which is useful for several purposes like industrial pollution control, water purification, food and beverage processing, and odour removal.

### Details

- The newly developed process avoids usage of any toxic agent for synthesizing activated carbon, thus making the product cost-effective as well as non-toxic.
- The processing of tea generates a lot of waste, generally in the form of tea dust. This could be converted to useful substances.
- The structure of tea was favourable for conversion to high-quality activated carbon.
- However, conversion to activated carbon involves use of strong acid and bases, making the product toxic and hence unsuitable for most uses.
- So a non-toxic method of conversion was needed to overcome this challenge.

### The process of preparing the activated carbon

- Oxygenated potassium compounds contained in the banana plant extract help in activating the carbon prepared from tea waste. An Indian patent has recently been granted for this.
- The banana plant extract used in the process was prepared by traditional way and is known as ***Khar***, which is an alkaline extract from the ashes of burnt dried banana peels.
- The most preferred banana for this is called '***Bheem Kol***' in Assamese.
- Bheem Kol is an indigenous variety of bananas found only in Assam and parts of North East India.
- To make ***khar***, first, the peel of the banana is dried and then burnt to make an ash out of it. The ash is then crushed and made into a fine powder.
- Then using a clean cotton cloth, water is filtered through the ash powder, and the final solution that we get is called ***khar***.
- The natural ***khar*** that is extracted from banana is called '***Kol Khar***' or '***Kola Khar***'. This extract was used as the activating agent.

## Automated fuelling technology "UFill"

### In news

BPCL launches automated fuelling technology "UFill" for customers.

### Highlights

- The UFill functionality does not need any App download, is payment App agnostic (i.e. customer can use any payment app already downloaded on his / her phone like GPay, PayTM, PhonePe etc), offers real time QR and voucher code through SMS and is accepted at all BPCL Fuel Stations where the functionality is enabled.
- Adding to transparency and convenience, if the amount paid in advance is partially used, the balance amount is immediately refunded to the bank account of the customer.

- If not used within 48 hours, the money paid in advance is automatically refunded to the bank account from where debited.

### Details

- It is a digital customer experience which delivers on BPCL's promise of ensuring that their customers have complete control over Time, Technology and Transparency as part of their fuelling experience.
- With UFill, the invitation to customers is to "**Fast forward your fill**", leveraging the latest in digital technology which obviates the need for looking at zero or final reading and such offline manual interventions.
- The UFill proposition has been launched in 65 cities across India and will soon be launched across the country.
- The technology provides the customer with control of fuelling as well as touch less pre-payment solution.
- With the dispensing unit getting automatically preset for the value of fuel paid for by him/her in advance and eliminates any manual intervention at the point of sale.

## Future Tech 2021

### Context

Technologies, today, have gained a special role across businesses because of its empirical characteristic. Technologies are combining in new ways, with the potential to optimize efficiencies, reduce costs and contribute in product innovation and creation.

### In news

MoS IT Shri Rajeev Chandrasekhar attends International Conference and Exhibition on Digital technologies - "Future Tech 2021".

### Aim

The event is aimed to help industry understand the nuances of technologies and enable a faster adoption of same for growth of their business.

### Details

- The event is scheduled from 19 – 27 October 2021. The event will revolve on 5 theme pillars: Strategy, Growth, Resilience, Inclusiveness, Trust with a focused theme "Driving technologies for building the future, we all can trust".
- The International conference would comprise of digital interactions and virtual exhibition and serve as an ideal platform for Indian industry and entrepreneurs to understand the nuances of technologies and identify the right approach and technologies for their business as well as B2B partnerships.
- It will also highlight the initiatives taken by Indian government towards enhancing India's competitiveness in the global economy and achieving self-reliance by enhancing the use of emerging technologies.

## Combating Mastitis, an ailment of dairy cattle

### In news

Utilising indigenous knowledge system shared by a farmer from Gujarat, a poly-herbal and cost-effective medicine has been developed to treat Mastitis, an infectious disease of dairy cattle.

### Details

- The medicine called *Mastirak Gel*, developed by National Innovation Foundation (NIF) has been commercialized through the industry partner Rakesh Pharmaceuticals.

- It can be purchased at medical stores supplying veterinary medicines in various parts of the country.
- Mastitis is a common infectious disease, which affects farm productivity due to fall in milk quality, thus impacting income-generating activities.
- Treatment of infected animals with antibiotics poses a public health hazard.
- Indigenous knowledge systems can offer a more sustainable alternative, and their scientific evaluation is necessary to integrate these medications in the health care system.

### Significance

It was found that the medication could minimize Somatic Cell Count (SCC) and improve the udder health. The Somatic Cell Count is a parameter noted globally, and efforts are fine-tuned in reducing the SCC in milk at standard limit. The polyherbal medicine reduced inflammation which is detrimental to udder.

## India's First Banni Buffalo IVF Calf Born

### In news

This first IVF Banni calf is born out of 6 Banni IVF pregnancies established.

### Details

- The scientists aspirated 3 Banni Buffaloes of Sushila agro farms of Vinay. L. Wala of Dhanej in Somnath district of Gujarat.
- They subjected 29 oocytes (egg cells) to intervaginal culture device (IVC) from these three Banni buffaloes.
- Total 20 oocytes from one of them were subjected to IVC.

### IVF Technology

- IVF stands for in vitro fertilization. It's one of the more widely known types of assisted reproductive technology (ART).
- IVF works by using a combination of medicines and surgical procedures to help sperm fertilize an egg, and help the fertilized egg implant in uterus.

## Non-toxic security ink

### In news

Indian Scientist has developed a highly stable and non-toxic security ink from nano-materials that spontaneously emit light (luminescent) due to its unique chemical properties to combat the counterfeiting of branded goods, bank-notes, medicine, certificates, currency.

### Issue

Counterfeiting of branded goods, bank-notes, medicine, certificates, currency, and other important documents is very common all over the world, and it has become a serious issue.

### Details of new ink

- Luminescent ink is generally used as covert tags to combat the counterfeiting.
- Most of the security inks available today are based on luminescent materials that absorb a high energy photon and emit low energy photon, technically called downshifting, where covert tag is invisible under daylight, and it becomes visible under UV light.
- However, these single emission-based tags are prone to replication.
- To overcome this, luminescent ink with excitation-dependent luminescent properties (downshifting and upconversion) are advised.

- This is because increasing the number of parameters required to decode the tag decreases the possibility of decoding and replication.
- However, most of the materials reported recently for this purpose are based on fluorides which are less stable and highly toxic.

## Synthesizing silver Nano-wires

### In news

Teams of Indian scientists and research students have developed a process for large-scale manufacturing of nano-materials (Silver nanowires) that can bring down the costs to less than one-tenth of the market price.

### Details

- Synthesis of one-dimensional nanomaterials like nanowires, nanotubes, and so on in large quantities is a technologically challenging task and hence makes it an expensive material.
- Secondly, it is necessary to get uniform nanowire diameter range with a narrow variation in the length as it helps achieve uniform coating for touch screens or other conducting coating applications.
- It is an economical process of continuous flow manufacturing of functional nano-materials (silver nanowires) at a large scale with support from the Advanced Manufacturing Technologies Program of the Department of Science & Technology, Government of India.
- The product manufactured consists of silver nanowires possessing excellent conductivity, which can be used in making conducting inks and coatings for display technologies and flexible electronics.
- A total of 5 national and international patents have also been filed for the novel process.

### Significance

- This is the first-ever continuous process for synthesizing a functional nanomaterial (Silver nanowires) efficiently with excellent product quality (aspect ratio of nanowires >1000) and at a very low cost (~20\$/gm) on a large scale (500 g/day) with a footprint of the pilot plant not more than 6 sq. meters.
- The process is a simple, cost-effective, and scalable synthesis route when compared to existing batch manufacturing protocols that even generate a large amount of nanoparticles in suspension, which is not easy to separate from nanowires.
- This technology can make the Indian industries enter into the niche area of electronic chemicals and eventually open up new jobs.

## Health & Medicine

### Production of quality planting material of medicinal plants

#### In news

National Medicinal Plant Board (NMPB) has joined hands with Institute of Himalayan Bioresource Technology, based in Himachal Pradesh's Palampur area, to promote the production of quality planting material of medicinal plants.

#### Details

- The two organisations have signed a Memorandum of Understanding to facilitate development of Quality Planting Material (QPM) of medicinal plants and herbs identified by NMPB and help in establishment of their nurseries for QPM development, promotion, conservation and cultivation of the appropriate medicinal



plants in different agro-climatic zones, including the Rare Endangered Threatened (RET) species and those growing in high-altitude regions.

- Established under the Ministry of Ayush, NMPB works towards supporting policies and programmes for the growth of trade, export, conservation and cultivation of medicinal plants.
- The CSIR-IHBT will also undertake research on mass multiplication and agro-technology development while the NMPB, through its implementing agencies i.e. State Medicinal Plant Boards, State AYUSH societies, State Horticulture Departments and Regional-cum-Facilitation Centres across India, will support projects related to QPM Development.

## Ecology & Environment

### Wetlands of India Portal

#### In news

On the occasion of Gandhi Jayanti a web portal – Wetlands of India Portal.

#### Details

- The portal is a single point access to all information relating to wetlands.
- The portal is a dynamic system for processing information and making it available to the stakeholders in an efficient and accessible manner.
- The portal also hosts capacity building material, data repository, videos and information for students.
- Importantly, a dashboard for each State and UT has been developed to access the portal and populate it with information of wetlands in their administration.
- The portal would be populated by the different States and UTs and additional features may be added in the coming months.
- The portal also enables citizen engagement. Currently citizens can register themselves and upload wetland related pictures across different themes.

#### Wetland

- A wetland is a place where the land is covered by water, either salt, fresh or somewhere in between.
- Marshes and ponds, the edge of a lake or ocean, the delta at the mouth of a river, low-lying areas that frequently flood—all of these are wetlands.

### Aerosol sources in central Himalayan region

#### In news

Mineral dust, biomass burning, secondary sulfate, secondary nitrate from northwest India and Pakistan, polluted cities like Delhi, the Thar Desert, and the Arabian Sea area, and long-range transported marine mixed aerosols are the main sources of aerosols in the central Himalayan region, shows a study

#### Details of the finding in study

- This dust transport and forest fires are the main sources of total suspended particles (TSP), particularly in pre-monsoon period (March-May) when TSP concentration peaks in the region.
- The study on source apportionment of atmospheric pollution, which elucidates the atmospheric chemistry, emission source origins, and transport pathways of aerosol over the central Himalayan region, will help

assessment of contributions and temporal variability of sources that influence the area through regional transport as well as climate impacts assessment.

- With a unique role in the Asian climate, the Himalayan region is considered a vulnerable environment.
- The researchers also suggested a significant effect of biomass-burning aerosols, while the relatively high water-soluble organic carbon and significant contributions of biomass burning, secondary, or aged organic aerosols over Nainital.

## Geospatial Energy Map of India

### In news

NITI Aayog in collaboration with Indian Space Research Organisation (ISRO) has developed a comprehensive Geographic Information System (GIS) Energy Map of India with the support of Energy Ministries of Government of India.

### Aim

It is a unique effort aimed at integrating energy data scattered across multiple organizations and to present it in a consolidated, visually appealing graphical manner.

### Details

- The GIS map provides a holistic picture of all energy resources of the country which enables visualisation of energy installations such as conventional power plants, oil and gas wells, petroleum refineries, coal fields and coal blocks, district-wise data on renewable energy power plants and renewable energy resource potential, etc through 27 thematic layers.
- The map attempts to identify and locate all primary and secondary sources of energy and their transportation/transmission networks to provide a comprehensive view of energy production and distribution in a country.
- It leverages latest advancements in web-GIS technology and open-source software to make it interactive and user friendly.
- The Geospatial Energy Map of India will be useful in planning and making investment decisions. It will also aid in disaster management using available energy assets.

## Ayush Van

### In news

Union Minister of Ports, Shipping and Waterways and AYUSH inaugurated Ayush Van, a dedicated forest for Ayurvedic plants in a program held at the Deendayal Port Trust (DPT)– Rotary Forest in the city.

### Details

- The Ayush Van was set up in 30 acres of land allotted by DPT in green-belt area where tree plantation is being done to improve greenery in urban area and increase density of tree cover in the Kutch region.
- Ayush Van is a dedicated forest for the Ayurvedic Plants.
- Medicinal plants of India are now becoming one of the major systems of well being that are being accepted globally.

### Ministry of Ayush in India

- The Ministry of Ayush was formed on the 9<sup>th</sup> of November 2014 with a vision of reviving the profound knowledge of our ancient systems of medicine and ensuring the optimal development and propagation of the Ayush systems of healthcare.

- Earlier, the Department of Indian System of Medicine and Homoeopathy (ISM&H) formed in 1995, was responsible for the development of these systems.
- It was then renamed as the Department of Ayurveda, Yoga, and Naturopathy, Unani, Siddha and Homoeopathy (Ayush) in November 2003 with focused attention towards education and research in Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homoeopathy.

## Bio-Economic Hub

### In news

Union Minister Dr Jitendra Singh says, North East to be developed as India's Bio-Economic Hub.

### Aim

This Mission that aims to promote the documentation, scientific validation and evaluation of traditional healthcare practices is an important step and assumes special significance in the context of the vast plant resources and diverse traditional healthcare practices of the North-East.

### Details

- The Eastern Himalayan Region is one of the mega-biodiversity rich zones and is among the 34 biodiversity Hotspots of the world.
- There is a need to put these invaluable genetic resources to use for the economic growth of the region in particular and to the nation in general, through biotechnological interventions.
- India's Bio-Economy is on its way to achieve 150-billion-dollar target from the current 70 billion-dollar by 2025 and will contribute effectively to the Prime Minister's vision of a 5 trillion-dollar economy by 2024-25.

# International Relation

## SWARNIM VIJAY VARSH

### In news

Bangladesh Naval Ship (BNS) Somudra Avijan arrived Visakhapatnam on a five-day visit to the Eastern Naval Command (ENC) on 03 October 2021.

### Details

- This visit by the Bangladesh Navy is to commemorate together the birth centenary of father of the nation, Bandhu Sheikh Mujibur Rahman and Swarnim Vijay Varsh marking the 50th anniversary of 1971 Indo-Pak war, which led to liberation of Bangladesh.
- A series of activities are scheduled between the two navies including professional interactions, cross deck visits, visit to INS Vishwakarma and INS Dega.
- In addition, screening of special documentary on the Bangladesh Navy and interaction with 1971 war veterans would be the major highlights of the visit.

### Background

The 'Swarnim Vijay Varsh' was observed to commemorate the country's extraordinary military operation in the 1971 War and the selfless sacrifice, dedication and devotion of the Indian Armed Forces personnel in protecting the sovereignty of the nation, according to an official release.

## 3rd India – UK Energy for Growth Partnership

### In news

3rd India – UK Energy for Growth Partnership – Ministerial Energy Dialogue.

### Details

- Both sides to set in motion concrete action plans for driving clean energy transition in Power Sector.
- Energy Transition was a major area of discussion in the dialogue and the Energy Ministers spoke in detail on the ongoing Energy Transition activities in their respective countries with focus on renewables, including solar, offshore wind, storage, EVs, alternative fuels, etc
- The UK side presented a detailed summary of the significant ongoing work and the past work done in the last two years under the umbrella of bilateral cooperation which was appreciated and endorsed by both the sides.
- The dignitaries welcomed the Roadmap 2030 for India-UK future relations launched by both the Prime Ministers during India-UK Virtual Summit on 4<sup>th</sup> May 2021 and identified various future areas of collaboration in line with the Roadmap 2030.
- The dialogue concluded with both sides underlining the importance of international cooperation in securing affordable and sustainable energy for the world while setting in motion, concrete action plans for driving the clean energy transition in Power Sector.

## 15th India-Israel Joint Working Group meeting

### In news

India-Israel Joint Working Group (JWG) on Bilateral Defence Cooperation has agreed to form a Task Force to formulate a comprehensive Ten-Year Roadmap to identify new areas of cooperation.

### Details

- This was decided at the 15th JWG meeting held on October 27, 2021 in Tel Aviv, Israel.
- The meeting was co-chaired by Defence Secretary Dr Ajay Kumar and the Director General of the Israel's Ministry of Defence, Maj Gen (Retd) Amir Eshel.
- The JWG is the apex body between the Ministry of Defence of India and Israel's Ministry of Defence to comprehensively review and guide all aspects of Bilateral Defence Cooperation.
- The two sides reviewed the progress made in Military to Military engagements including exercises and industry cooperation.
- The Co-chairs were also appraised on the progress made by the Sub Working Groups (SWG) on Defence Procurement & Production and Research & Development.
- It was also decided to form a SWG on Defence Industry Cooperation and in this regard a Terms of Reference was signed between the two sides.
- The formation of this SWG would enable efficient utilisation of bilateral resources, effective flow of technologies and sharing industrial capabilities.
- It was also decided to schedule the Service level Staff talks in a specific time frame.

## Green Grids Initiative-One Sun One World

### In news

One Grid Green Grids Initiative-One Sun One World One Grid Northwest Europe Cooperative Event was organised among several countries

### Details

- India is well on its way to achieving its Nationally Determined Contributions (NDCs) relating clean energy and emission reduction well ahead of the target date.
- Accelerating global power transition is a top priority for the UK as it leads the UN Climate Change Conference (COP26).

### Background

- Modi first floated the idea in 2018 during the first assembly of the International Solar Alliance (ISA).
- The ambitious OSOWOG will connect 140 countries through a common grid that will be used to transfer solar power.
- The vision behind the OSOWOG mantra is “the Sun never sets” and is a constant at some geographical location, globally, at any given point of time.
- With India at the fulcrum, the solar spectrum can easily be divided into two broad zones, which is the far East which would include countries like Myanmar, Vietnam, Thailand, Lao, Cambodia and far West which would cover the Middle East and Africa Region,” MNRE said in the terms of reference in the RfP published to hire consultants for OSOWOG.
- OSOWOG is planned to be completed in three phases. The first phase will entail interconnectivity within the Asian continent; the second phase will add Africa and the third phase will globalise the whole project.

## International Year of Fruits and Vegetables

### Why in news?

Union Minister for Agriculture & Farmers Welfare Shri Narendra Singh Tomar addressed a National Conference on “International Year of Fruits and Vegetables” organized by the Ministry of Agriculture and Farmers' Welfare in collaboration with the Food and Agriculture Organization of the United Nations.

### About the International Year of Fruits and Vegetables

- **The UN General Assembly as the International Year of Fruits and Vegetables (IYFV) has designated 2021.**
- The IYFV is a unique opportunity to raise awareness of the important role of fruits and vegetables in human nutrition, food security and health as well as in achieving the UN Sustainable Development Goals.
- It is an attempt of the UN to raise awareness on the importance of fruits and vegetables in our daily lives as well as in doubling of farmers' income.
- India is the second-largest producer of horticulture, producing about 12% of the global fruit and vegetable production.
- On the 15 December 2020 FAO's launched the 2021 IYFV with an appeal to improve healthy and sustainable food production through innovation and technology and to reduce food loss and waste.

### Objectives

- Raising awareness of and directing policy attention to the nutrition and health benefits of fruits and vegetables consumption.
- Promoting diversified, balanced, and healthy diets and lifestyles through fruit and vegetable consumption.
- Reducing losses and waste in fruits and vegetables food systems.



- Sharing best practices on promotion and consumption, improved sustainability, supply chains and capacity strengthening.

## Schemes & Policies, Social Issues

### Swachh Bharat Mission-Urban 2.0 and AMRUT 2.0

#### In news

PM launches Swachh Bharat Mission-Urban 2.0 and AMRUT 2.0

#### Details

- Country's target in the next phase of Mission AMRUT is 'Improving sewage and septic management, making our cities water-safe cities and ensuring that no sewage drains anywhere in our rivers.
- In the journey of Swachh Bharat Abhiyan and AMRUT Mission, there is a mission, there is respect, there is dignity, there is the ambition of a country and there is also unmatched love for the motherland.
- Street vendors and hawkers as one of the most important partners of any city in the program related to urban development.
- Sabka Saath, Sabka Vikas and Sabka Vishwas, Sabka Prayas is critical for the campaign of cleanliness.

#### Swachh Bharat Mission-Urban 2.0

- SBM-U 2.0 envisions to make all cities '**Garbage Free**' and ensure grey and black water management in all cities other than those covered under AMRUT, make all urban local bodies as ODF+ and those with a population of less than 1 lakh as ODF++, thereby achieving the vision of safe sanitation in urban areas.
- The Mission will focus on source segregation of solid waste, utilizing the principles of **3Rs (reduce, reuse, recycle)**, scientific processing of all types of municipal solid waste and remediation of legacy dumpsites for effective solid waste management.
- The outlay of SBM-U 2.0 is around ₹1.41 lakh crore.

#### About AMRUT 2.0

- AMRUT 2.0 aims to provide 100% coverage of water supply to all households in around 4,700 urban local bodies by providing about 2.68 crore tap connections and 100% coverage of sewerage and septage in 500 AMRUT cities by providing around 2.64 crore sewer/ septage connections, which will benefit more than 10.5 crore people in urban areas.
- AMRUT 2.0 will adopt the principles of circular economy and promote conservation and rejuvenation of surface and groundwater bodies.
- The Mission will promote data led governance in water management and Technology Sub-Mission to leverage latest global technologies and skills.
- '**Pey Jal Survekshan**' will be conducted to promote progressive competition among cities.
- The outlay of AMRUT 2.0 is around ₹2.87 lakh crore.

#### Impact of SBM-U and AMRUT

- SBM-U and AMRUT have contributed significantly to improve urban landscape during the last seven years.
- The two flagship Missions have augmented the capacity to deliver basic services of water supply and sanitation to the citizens. Swachhta has become a Jan Andolan today.

- All urban local bodies have been declared Open Defecation Free (ODF) and 70% solid waste is being scientifically processed now.
- AMRUT has been ensuring water security by adding 1.1 crore household water tap connections and 85 lakh sewer connections, thus benefiting more than 4 crore people.

## Chacha Chaudhary Declared Mascot For Namami Gange Programme

### In news

At the 37<sup>th</sup> Executive Committee meeting of the National Mission for Clean Ganga, Chacha Chaudhary was declared as the mascot of the Namami Gange Programme and some major projects in Uttar-Pradesh and Bihar were discussed and evaluated.

### Bihar

- NMCG has been focusing on youth as part of its outreach and public communications efforts as they are the impellers of change.
- As a step towards this NMCG has tied-up with Diamond Toons to develop and distribute comics, e-comics and animated videos.
- The content will be designed with the objective of bringing about behavioral change amongst children towards Ganga and other rivers.
- The major components of the project will be Wetland inventory and assessment, Wetland management planning, Wetland's monitoring, and Capacity development and outreach.

### Aim

The proposal aims at creating a knowledge base and capacities for effective management of floodplain wetlands in the 12 Ganga districts in Bihar to ensure sustained provision of wetlands ecosystem services and securing biodiversity habitats.

### Uttar Pradesh

- A Detailed Project Report (DPR) for ***“Interception and Diversion of Drains and Sewage Treatment Works at Pratapgarh, Uttar-Pradesh”*** was presented.
- It will also add to the overall aesthetics of the area.
- Major components of this project will be Interception and Diversion of drains discharging into the river to existing STPs, development of 12.472 KM sewer line for connection of drains to STP (of these 7.60 KM is already built and the balance 4.872 KM is in-progress), two separate low-cost treatment processes based STPs for two different drains and an onsite low-cost treatment based on wetland technology proposed for Ramlila drain which flows parallel to the railway line.

### Aim

The main aim of this project is reduction of pollution load from Pratapgarh into river Sai along with the improvement in bio-diversity and eco-system of the river and improvement in general hygiene and sanitation.

## Cabinet approves AMRUT 2.0

### In news

AMRUT 2.0 has been approved as a step towards AatmaNirbhar Bharat and with aim of making the cities 'water secure' and 'self-sustainable' through circular economy of water.

## Details

- The cabinet understands that providing reliable and affordable water supply and sanitation services to urban households is a national priority.
- This will be achieved by providing functional tap connections to all households, undertaking water source conservation/ augmentation, rejuvenation of water bodies and wells, recycle/re-use of treated used water and rainwater harvesting.
- The project shall lead to ease of living by providing piped water supply and sewerage / septage facility to urban households.

## Target

- Mission targets to provide 2.68 crore tap connections and 2.64 crore sewer/ septage connections to achieve the intended outcomes.
- Mission will be monitored on a robust technology based portal.
- The projects will be geo-tagged. There will be an endeavor to make it a paper-less Mission.
- Cities will assess their water sources, consumption, future requirement and water losses through a city water balance plan.

## Other feature

- Other key features of AMRUT 2.0 (U) include Pey Jal Survekshan which will encourage competition among cities for benchmarking urban water services.
- Mission will also encourage mobilization of market finance by mandating implementation of 10% of worth of projects in cities with population above ten lakh through Public Private Participation.
- Mission will also bring in the leading technologies in water sector in world through technology sub-Mission. Entrepreneurs/ start-ups will be encouraged in water eco-system.

## NIPUN Bharat Mission

### In news

Government sets up National Steering Committee for implementation of the NIPUN Bharat Mission.

### Details

- The Department of School Education and Literacy had launched the National Initiative for Proficiency in Reading with Understanding and Numeracy, NIPUN Bharat Mission on 5<sup>th</sup> July, 2021.
- Its aim was to achieve the goal of universal proficiency in foundational literacy and numeracy for every child by grade 3, as envisaged by NEP 2020.

### Roles and responsibilities of the NSC for the NIUPN Bharat Mission are

- To oversee the progress of National Mission on Foundational Literacy and Numeracy and provide guidance on policy issues.
- To arrive at the target to be achieved nationally in 2026-27.
- To disseminate tools for measurement of yearly progress in the form of guidelines.
- To prepare and approve a National Action Plan (based on the State's Action Plans) with KRAs for every State/UT vis-à-vis factors attributable for the gaps (i.e., lack of Fund, Vacancies, Teachers, Demography, Local issues, Need of Training for teachers, Curriculum & pedagogy related).
- To review programmatic and financial norms periodically to ensure they are synchronised with targets to be achieved.
- To develop methodology of assessment to analyse the progress and provide feedback to States/UTs.

## CII Asia Health 2021 Summit

### In news

The Union Minister for Health and Family Welfare, **Dr. Mansukh Mandaviya** participated in the **CII Asia Health 2021 summit** on October 28, 2021 through video-conferencing

### Details

- The theme of the two-day summit is **'Transforming Healthcare for a better tomorrow'**.
- The Confederation of Indian Industry (CII) has organised the summit to provide a centralised forum to deliberate on most critical challenges that India and the world face in delivering healthcare, with focus on the digital transformations that result in improved patient outcomes and experience.
- Government has been working by focusing on the theme of 'From Token to Total Health'. Prime minister had launched the "PM Ayushman Bharat Health Infrastructure Mission" on October 25, 2021 to strengthen the healthcare infrastructure in India.
- There is a need to adopt latest technologies like Nano and Robotic technologies in the Health sector.
- The Ayushman Bharat Digital Mission is one such initiative that will utilize the digital ecosystem to further ease of living.

## First 'One District, One Product' (ODOP) brand

### In news

The Ministry of Food Processing Industries, in association with the National Agricultural Cooperative Marketing Federation of India (NAFED), launched the first 'One District, One Product' 'Dilli Bakes' in the bakery products category of the Pradhan Mantri Formalisation of Micro food processing Enterprises (PMFME) Scheme

### Details

- The brand and the product have been exclusively developed under the ODOP concept for the bakery which is one of the ODOPs for Delhi.
- This is the first product, i.e., whole wheat rusks launched under the *Dilli Bakes* brand and will be followed by launch of more products.
- According to NAFED, the whole wheat rusks is a unique product as it is made with jaggery instead of sugar and contains butter instead of vanaspati.
- Under the PMFME Scheme, the Ministry of Food Processing industries had signed an MoU with NAFED for developing ten brands of the selected ODOPs under the branding & marketing component of the scheme.

### About the PMFME Scheme

Launched under the Aatmanirbhar Bharat Abhiyan, the Pradhan Mantri Formalisation of Micro food processing Enterprises (PMFME) Scheme is a centrally sponsored scheme that aims to enhance the competitiveness of existing individual micro-enterprises in the unorganized segment of the food processing industry and to promote formalization of the sector and provide support to Farmer Producer Organizations, Self Help Groups, and Producers Cooperatives along their entire value chain. With an outlay of Rs. 10,000 crore over a period of five years from 2020-21 to 2024-25, the scheme envisions to directly assist the 2,00,000 micro food processing units for providing financial, technical, and business support for upgradation of existing micro food processing enterprises.

## Defence & Security

## INDO-NEPAL JOINT EXERCISE SURYA KIRAN XV

### In news

The 15th Edition of Indo-Nepal Joint Training Exercise, EXERCISE SURYA KIRAN XV culminated at Pithoragarh, Uttarakhand after 14 days of rigorous training

### Details

- The Joint Exercise, which began on 20 Sep 2021, was focused on Counter Terrorism and Disaster Relief operations.
- 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.
- The senior officials expressed their satisfaction and appreciation towards the professional conduct of the exercise.
- 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.

## FIFTH EDITION OF 'JIMEX'

### In news

The fifth edition of India – Japan Maritime Bilateral Exercise, JIMEX, between the Indian Navy (IN) and the Japan Maritime Self-Defence Force (JMSDF), will be held in Arabian Sea from 06 to 08 October 2021.

### Aim

JIMEX-21 aims to develop common understanding of operational procedures and enhance inter-operability through conduct of a multitude of advanced exercises, across the entire spectrum of maritime operations.

### Details

- JIMEX series of exercises commenced in January 2012 with special focus on maritime security cooperation.
- The last edition of JIMEX was conducted in September 2020.
- Indigenously built Guided Missile Stealth Destroyer Kochi and Guided Missile Frigate Teg, under the command of Rear Admiral Ajay Kochhar, Flag Officer Commanding Western Fleet, will represent the Indian Navy
- Multi-faceted tactical exercises involving **weapon firings, cross-deck helicopter operations and complex surface, anti-submarine and air warfare drills** will consolidate coordination developed by the two navies.
- Naval cooperation between India and Japan has increased in scope and complexity over years.
- JIMEX-21 will further enhance the cooperation and mutual confidence between the two navies and fortify the long-standing bond of friendship between the two countries.

## EXERCISE AJEYA WARRIOR

### In news

The 6th Edition of India - UK Joint Company Level Military Training EXERCISE AJEYA WARRIOR has commenced at Chaubatia, Uttarakhand and will culminate on 20 Oct 2021.



## Details

- The exercise is part of an initiative to develop inter-operability and sharing expertise with friendly foreign nations.
- During this exercise, an Infantry Company from Indian Army and an equivalent strength from UK Army would be sharing their experiences gained during the conduct of various military operations in their respective countries and during overseas engagements.
- Together, both the armies stand to benefit from their varied experiences.
- As part of the training, both the Armies would familiarise with each other's weapons, equipment, tactics, techniques and procedures for carrying out joint military operations.
- Also, there would be a series of Expert Academic Discussions on various subjects of mutual interest such as Combined Arms Concept, Sharing of Experiences in Joint Force, Operation Logistics etc.
- The joint military training would culminate with a grueling 48 hours exercise to validate the performance of both the Armies in conducting joint military operations in a semi-urban environment.
- This joint military training will go a long way in improving bilateral relations and also will be a major step towards further strengthening the traditional bond of friendship between the two Nations.

## JAPAN-INDIA BILATERAL MARITIME EXERCISE 'JIMEX'

### In news

The 5th edition of the bilateral maritime exercise JIMEX, between Japan and India, was conducted in the Arabian Sea from 06 – 08 October 2021.

### Details of 6th edition

- The exercise saw the ships and aircraft of Japan Maritime Self Defence Force (**JMSDF**) and Indian Navy (**IN**) engaging in a high tempo of operations focused on air, surface and sub-surface dimensions of maritime operations as well as the air domain.
- The units practiced **Replenishment at Sea approaches** and undertook **fuel rig connect-up between Kaga and Kochi**.
- The exercise also involved complex **Over the Horizon Targeting** exercises and **surface gun shoots** on an expendable target.
- An **advanced coordinated anti-submarine exercise** involving an underwater target deployed by JMSDF saw surface units and IN's P8I aircraft exercising with **seamless coordination**.
- The Air Domain operations included advanced anti-aircraft firing exercises on Expendable Aerial Target launched from the deck of INS Kochi and ship controlled Beyond Visual Range (BVR) combat drills by IN's MiG 29K fighters.
- The exercise involved a high tempo of flying operations with MiG 29K fighters coming in for multiple simulated air strike on surface units, shepherded by the IN's Maritime Patrol Aircraft, Dornier.
- The inclement weather could do little to hold back IN and JMSDF helicopters from undertaking **cross-deck landings**, showcasing a **high level of interoperability**.

### JIMEX Exercise

- JIMEX series of exercises **commenced in January 2012** with special focus on maritime security cooperation.
- It is **conducted biennially** between the Indian Navy and Japanese Maritime Self-Defense Force (JMSDF).

## MULTILATERAL MARITIME EXERCISE MALABAR 2021

### In news

The Indian Navy (IN) would be participating in the Second Phase of Multilateral Maritime Exercise Malabar along with the Japan Maritime Self Defence Force (JMSDF), Royal Australian Navy (RAN) and the United States Navy (USN).

### Details

- The exercise is being conducted in the Bay of Bengal from 12 – 15 Oct 2021.
- First Phase of the exercise was conducted in the Phillipines Sea from 26 – 29 Aug 2021.
- The Second Phase of the exercise would build upon the synergy, coordination and inter-operability developed during the First Phase of the exercise and would focus on advanced surface and anti-submarine warfare exercises, seamanship evolutions and weapon firings.
- The 25<sup>th</sup> edition of MALABAR, being conducted in two phases, while observing all protocols during the COVID-19 pandemic, is reflective of the commitment of the participating countries to support a free, open, inclusive Indo-Pacific as well as a rules-based international order.

### Participants

- The Indian Navy's participation includes INS Ranvijay, INS Satpura, P8I Long Range Maritime Patrol Aircraft and a Submarine.
- The Aircraft Carrier USS Carl Vinson along with two destroyers, USS Lake Champlain and USS Stockdale, will represent the US Navy.
- The JMSDF will be represented by JS Kaga and JS Murasame. Whilst, the Royal Australian Navy will be represented by HMAS Ballarat and HMAS Sirius.

### Background

The Malabar series of exercises, which began as an annual bilateral naval exercise between India and the US in 1992, has seen increasing scope and complexity over the years.

## Dr APJ Abdul Kalam Prerana Sthal

### In news

'Dr APJ Abdul Kalam Prerana Sthal' was inaugurated at Naval Science & Technological Laboratory (NSTL), Visakhapatnam on October 15, 2021.

### Details

- The NSTL is the premier naval research laboratory of Defence Research & Development Organisation (DRDO).
- Dr Samir V Kamat, Director General (Naval Systems & Materials), DRDO, also unveiled a statue of Dr Kalam.
- As part of 'Azadi Ka Amrit Mahotsav', the DRDO is taking various initiatives towards highlighting the importance of R&D and increasing awareness among general public and igniting young minds in particular.
- On the occasion, NSTL products Varunastra, Torpedo Advanced Light (TAL) and Maareech decoy are being displayed at the venue.
- 'DRDO and NSTL are taking various initiatives towards highlighting the importance of R&D, motivating the DRDO fraternity and raising awareness among the general public.

## EXERCISE MITRA SHAKTI

### In news

The 8th Edition of joint military exercise between the Indian Army and the Sri Lankan Army, Exercise MITRA SHAKTI which was conducted from 04 - 16 October 2021, culminated at Combat Training School, Ampara.

### Details

- The two week long exercise is being conducted from 04 to 15 October 2021.
- Exercise Mitra Shakti, based on counter insurgency and counter terrorism operations in semi urban terrain is the largest bilateral exercise being undertaken by the Sri Lankan Army and it forms a major part of India and Sri Lanka's growing defence partnership.
- The Indian Army contingent comprising of 120 personnel of Infantry Battalion Group and a similar strength from a Battalion of the Sri Lankan Army are participating in the bilateral exercise.
- Over the next few days, troops will train, share and rehearse tactical drills to undertake joint counter-terrorism operations in a semi urban/rural environment under United Nations mandate.
- Senior military observers and dignitaries of the Indian and the Sri Lankan Armies will be witnessing the validation phase of the exercise.
- The exercise provides an ideal platform for both contingents to share their operational experience and expertise while also being instrumental in broadening the inter-operability and cooperation between the Armies of India and Sri Lanka.

## Web-based project monitoring portal for Military Engineer Services

### In news

Raksha Mantri Shri Rajnath Singh launched Web Based Project Monitoring Portal (WBMPM) for Military Engineer Services (MES) at New Delhi on 20<sup>th</sup> October 2021.

### Details

- The portal conceptualized in accordance with the Digital India Mission of the Union Government, has been developed by Bhaskaracharya National Institute for Space Applications and Geo-informatics (BISAG-G)"
- The newly launched unified portal is the first project management e-Governance to be implemented by the MES.
- It will enable real time monitoring of projects from its inception to completion.
- All stakeholders not only from MES but also Armed Forces users can gain access to the project information.
- This is one among many initiatives of MES for the scientific management of this organisation.

### Way forward

- Taking forward the Digital India Mission, MES is also in process of implementing nine other e-Governance applications in an endeavor to increase productivity, build transparency and improve efficiency towards infrastructural development for the Army.
- These include Product Approval Portal, AWMP Scrutiny & Status Application, E-Measurement Book, Budget Management Portal, Work Estimation Application, Billing and Construction Account Management, Cashbook Management and Accounting System, Contractor and Consultant Enlistment Portal & E-Deviation.

## ABHYAS successfully flight-tested

### In news

ABHYAS - the High-speed Expendable Aerial Target (HEAT) was successfully flight-tested today by Defence Research and Development Organisation (DRDO) from the Integrated Test Range (ITR), Chandipur off the coast of Bay of Bengal in Odisha.

### Details

- The vehicle can be used as an aerial target for evaluation of various missile systems.
- The performance of the target aircraft was monitored through telemetry and various tracking sensors including Radars and Electro Optical Tracking System (EOTS).  
The current flight test is carried out as a part of developmental flight trials.
- Expression of interest for production of the vehicle has already been floated to Indian industries.
- This indigenous target aircraft, once developed, will meet the requirements of High-speed Expendable Aerial Targets (HEAT) for Indian Armed Forces.

## INDO-PACIFIC REGIONAL DIALOGUE 2021

### In news

First conducted in 2018, the Indo-Pacific Regional Dialogue (IPRD) is the apex international annual conference of the Indian Navy, and is the principal manifestation of the navy's engagement at the strategic-level.

### Aim

The aim of each successive edition of the IPRD is to review both opportunities and challenges that arise within the Indo-Pacific.

### Details

- The National Maritime Foundation is the navy's knowledge partner and chief organiser of each edition of this annual event.
- IPRD-2018 focussed on four main sub-themes: maritime trade; regional connectivity; pan-regional challenges such as those of persistent maritime surveillance, the increasing digitisation of the maritime space, and cyber-malevolence within the maritime domain; and, the role of industry in enhancing holistic maritime security.
- IPRD 2019 built upon the excellent foundation laid by the inaugural edition and examined five themes: practical solutions for achieving cohesion in the region through maritime connectivity; measures to attain and maintain a free and open Indo-Pacific; examining a regional approach to Blue Economy; opportunities from Maritime-Industry 4.0; and, regional opportunities arising from SAGAR and SAGARMALA.

### IPRD will focus on eight specific sub-themes

- Evolving Maritime Strategies within the Indo-Pacific: Convergences, Divergences, Expectations and Apprehensions.
- Adaptive Strategies to Address the Impact of Climate Change upon Maritime Security.
- Port-led Regional Maritime Connectivity and Development Strategies.
- Cooperative Maritime Domain Awareness Strategies.
- Impact of the Increasing Recourse to Lawfare upon a Rules-based Indo-Pacific Maritime Order.
- Strategies to Promote Regional Public-Private Maritime Partnerships.
- Energy-Insecurity and Mitigating Strategies.
- Strategies to Address the Manned-Unmanned Conundrum at Sea.

## Konkan Shakti 2021

### In news

The sea phase of maiden Tri-Service exercise '**Konkan Shakti 2021**' between the Armed Forces of India and United Kingdom (UK) is being held off the Konkan coast in the Arabian Sea.

### Details

- This is first bilateral tri-service exercise.
- All participating units were split into two opposing forces with the aim of achieving sea control to land Army ground-troops at a pre-designated site.
- The two forces integrated within their groups with exercises such as replenishment at sea approaches, air direction and strike operations by fighter aircraft (MiG 29Ks and F35Bs), cross control of helicopters (Sea King, Chetak and Wildcat), transiting through war-at-sea scenarios and gun shoots on expendable air targets.
- The simulated induction of Army troops was also undertaken, followed by setting up of a joint command operations centre.
- Thereafter, the two forces effected a rendezvous at sea with advanced air and sub-surface exercises.

### Operations

- The air operations included strikes on the combined formation by Indian maritime patrol aircraft (MPA) Dornier, fighters of the Indian Navy (MiG 29Ks), Royal Navy (F35Bs) and Indian Air Force (SU-30 and Jaguars) as well as a composite fly past over the formation.
- Sub-surface exercises with an Indian Scorpene class submarine and underwater remote controlled vehicle EMATT, operated by the Royal Navy, were undertaken through the night.
- Indian MPA, P8I also participated in the exercise.

## Indian Coast Guard Ship 'Sarthak' dedicated to the Nation

### In news

In a significant boost to the maritime safety and security of the nation, the indigenously built Indian Coast Guard Ship 'Sarthak' was commissioned and dedicated to the nation on October 28, 2021.

### Details

- ICGS Sarthak will be based at Porbandar in Gujarat and operate on India's Western Seaboard under the Operational and Administrative Control of the Commander, Coast Guard Region (Northwest).
- ICGS Sarthak is 4<sup>th</sup> in the series of five OPVs being built by Goa Shipyard Limited for the ICG.
- These OPVs are multi-mission platforms capable of undertaking concurrent operations.
- The 105-meter-long ship displacing 2,450 tons is propelled by two 9,100 kilowatt diesel engines designed to attain a maximum speed of 26 knots.
- The ship is fitted with state-of-the-art equipment, machinery, sensors and weapons which enables it to function as a command platform and undertake mandated Coast Guard charter of duties including search & rescue, combating maritime crimes and preserving & protecting the marine environment.
- Indian Coast Guard is a pioneer in inducting indigenous platforms and ICGS Sarthak is a glowing example of 'Atmanirbhar Bharat'.



## Ex Yudh Abhyas 2021

### In news

The 17th Edition of Indo-US joint exercise “Ex Yudh Abhyas 2021”, the joint military training between Indian and the US Armies concluded at Joint Base Elmendorf Richardson, Alaska on 29 October 2021.

### Aim

The exercise aims at enhancing understanding, cooperation and inter-operability between two Armies. The joint exercise will focus on Combined Arms Manoeuvres in cold climatic conditions and is primarily aimed at sharing tactical level drills and learning best practices from each other.

### Details

- The contingent, comprising of 350 personnel of an Infantry Battalion Group.
- Exercise YudhAbhyas is the largest running joint military training and defence cooperation endeavor between India and USA.
- This will be the 17<sup>th</sup> Edition of the joint exercise which is hosted alternately between both countries.
- The previous version of this exercise was held at Mahajan Field Firing Ranges in Bikaner, Rajasthan in February 2021.
- This exercise is another step in the growing military cooperation between the two countries.

## DRDO & IAF jointly flight test Long-Range Bomb successfully

### In news

Defence Research and Development Organisation (DRDO) and Indian Air Force (IAF) team jointly flight tested indigenously developed Long-Range Bomb (LRB) successfully from an aerial platform on October 29, 2021

### Details

- The LR Bomb, after release from the IAF fighter aircraft, guided to a land-based target at a long range with accuracy within specified limits.
- All the mission objectives were successfully met.
- The flight of the bomb and the performance was monitored by a number of range sensors including Electro Optical Tracking System (EOTS), Telemetry and radar deployed by the Integrated Test Range, Chandipur in Odisha.
- The LR Bomb has been designed and developed by Research Centre Imarat (RCI), a DRDO laboratory located at Hyderabad in coordination with other DRDO laboratories.
- The development came a few days after the country successfully test fired the Agni-5 missile, from the APJ Abdul Kalam Island off the coast of Odisha.

## Miscellaneous

### State of the World’s Children report

#### In news

Union Minister for Health and Family Welfare released UNICEF’s global flagship publication – **“The State of the World’s Children 2021”**

## Details

- Mental Health is both an old issue and an emerging issue.
- While our traditional systems of medicine thoroughly emphasize on Holistic Health and complete well-being, Mental Health problems in developing countries like India have been on the rise.
- Teachers are very important stakeholders for addressing mental health issues along with parents and family. Family and teachers should have open consultation with children from a position of mutual trust and respect.
- *The State of the World's Children 2021* has found that around 14 percent of 15 to 24-year-olds in India, or 1 in 7, reported often feeling depressed or having little interest in doing things.

## The State of the World's Children 2021

- *The State of the World's Children 2021* examines child, adolescent and caregiver mental health.
- It focuses on risks and protective factors at critical moments in the life course and delves into the social determinants that shape mental health and well-being.
- It calls for **commitment**, **communication** and **action** as part of a comprehensive approach to promote good mental health for every child, protect vulnerable children and care for children facing the greatest challenges.

## Earth Guardian Award

### In news

Parambikulam Tiger Conservation Foundation has won the Earth Guardian Award for its efforts in supporting the conservation of tigers and biodiversity.

### Details

- NatWest Group India (formerly RBS India) instituted the award at the 11th edition of the NatWest Group Earth Heroes Awards.
- "Biodiversity – a resilient nature is the foundation on which all climate mitigation and adaptation efforts must be raised", is the theme for the 2021 awards.
- Parambikulam Tiger Conservation Foundation, located in the Western Ghats, is one of the premier tiger reserves of India and is endowed by nature in terms of species, habitat, and ecosystem diversity, characterised by functional human-ecological affinities.
- The wildlife sanctuary also considers the role that local communities play in conservation efforts to be vital.
- The Foundation's long-term vision is to facilitate and support the conservation of tigers and biodiversity through multi-stakeholder participation consistent with the national and State Policies, Acts, Rules and Legislations, and also as per approved Tiger Conservation Plan to support similar initiatives in adjoining landscapes.

## National Apprenticeship Mela

### In news

Skill India with due support from Directorate General of Training (DGT) and National Skill Development Corporation (NSDC) is organizing a day long "**National Apprenticeship Mela**" across the country in over 400 locations on October 4<sup>th</sup>, 2021.

### Details

- The aim is to support the hiring of nearly one lakh apprentices and assist employers in tapping the right talent and develop it further with training and providing practical skillsets.

- The event is expected to witness participation from more than 2000 organisations operating in more than 30 sectors such as Power, Retail, Telecom, IT/ITeS, Electronics, Automotive and more.
- In addition, the aspiring youth will have the opportunity to engage and select from more than 500+trades including Welder, Electrician, Housekeeper, Beautician, Mechanic etc.
- This training is under the Apprentices Act, 1961. And support through National Apprenticeship Promotion Scheme.

### Significance

- Potential applicants will receive several benefits by attending the Apprenticeship Mela.
- They have a huge opportunity to get apprenticeship offered on the spot and receive direct industry exposure.
- Following, they will get monthly stipend as per the Government standards for developing new skills, an opportunity to earn while they learn.
- The candidates will get certificates, recognized by National Council for Vocational Education and Training (NCVET), increasing the chances of their employability after the training.

### Background

- The National Policy of Skill Development and Entrepreneurship, 2015 launched by the Hon'ble Prime Minister on July 15<sup>th</sup>, 2015 recognises apprenticeship as a means to provide gainful employment to skilled workforce with adequate compensation.
- MSDE has also taken several efforts to increase the number of apprentices hired by enterprises in the country.
- The aim is to fill the gap in supply and demand for skilled workforce and meet the aspirations of the Indian youth through gaining on-the-job training and securing better opportunities for employment.

## Heli-Borne Survey

### In news

- The Heli-Borne Survey for Ground Water Management in Arid Regions was inaugurated at Jodhpur, Rajasthan.
- The Central Ground Water Board, Ministry of Jal Shakti and CSIR-NGRI (National Geophysical Research Institute), Hyderabad have signed agreement for use of advanced heli-borne geophysical survey and other scientific studies in parts of the States of Rajasthan, Gujarat Haryana, Punjab and Himachal Pradesh covering an area of 3.88 lac sq. km under the Aquifer Mapping Programme.

### Aim

- The Heli-Borne Survey aims to conduct High resolution aquifer mapping using heliborne geophysical studies, including identification of Sites for artificial recharge, 3D Geophysical model, Geophysical Thematic maps at horizontal and vertical planes, Aquifer Geometry of principal aquifer with demarcation of de-saturated and saturated aquifers, Aquifer system with relatively fresh and saline zones.
- The survey also aims to map Spatial and depth wise distribution of paleochannel network if any and its linkage with aquifer system.

### Significance

The expected outcome includes selecting suitable sites for groundwater withdrawal and water conservation through artificial or managed aquifer recharge.

## India Post launches e-PLI bond

### In news

ePLI bond is made available in collaboration with DIGILOCKER, National eGovernance Division (NeGD), Ministry of Electronics & IT (MeitY) Government of India.

### Aim

The policyholder will get the benefit of presenting the digital copy during the maturity settlement at the Post office from the digilocker mobile app's issued section. The digital copy will be treated as a valid policy document by the Postal Department. Similarly, the policyholder can use the ePLI Bond as proof, for effecting any changes that are required in the policy document like address change, nomination e.t.c without the hassle of carrying the physical copy.

### Details

- DigiLocker has been providing a secure cloud-based platform for storage, sharing and verification of documents & certificates for various organisations.
- By securely logging in to the Digilocker, the user can download the digital copy of the Policy bond on their mobile phone. Both the Postal Life Insurance (PLI) as well as the Rural Postal Life Insurance (RPLI) policy bonds are available in the 'electronic form'.
- ePLI policy bonds having a digital signature is valid proof as per the Rule 9A of the Information Technology (Preservation and Retention of Information by Intermediaries Providing Digital Locker Facilities) Rules, 2016 notified on February 8, 2017, vide G.S.R. 711(E).
- The policyholder will get the benefit of presenting the digital copy during the maturity settlement at the Post office from the digilocker mobile app's issued section.
- The digital copy will be treated as a valid policy document by the Postal Department.
- Similarly, the policyholder can use the ePLI Bond as proof, for effecting any changes that are required in the policy document like address change, nomination e.t.c without the hassle of carrying the physical copy.

## NITI Aayog's Atal Innovation Mission Digi-Book

### In news

NITI Aayog's Atal Innovation Mission (AIM) has launched – "*Innovations for You*" an attempt to showcase the success stories of Atal Innovation Mission's Startups in different domains.

### Aim

**The Digi-book series - Innovations for You** - aims to showcase the best of innovations and entrepreneurs and bring them to the forefront. The subsequent editions of the book will focus on other emerging sectors including edutech, agritech and mobility etc.

### Details

- These startups have worked to create new, disruptive and innovative products, services, and solutions that can pave a path for a sustainable future.
- The first edition of this book is focused on innovations in Health Care and soon other sectors shall follow.
- NITI Aayog's new Digi-book is a compilation of 45 health tech startups, which have been incubated at Atal Incubation Centres spread across the country.
- These startups have been leveraging technologies including IoT, AI, ICT and others to provide socially relevant solutions to health issues such as mental health, neonatal and child care, anemia, dental care and monitoring human vitals.

## Women in Agri-Startups

### In news

The Department of Agriculture & Farmers Welfare organized a webinar on “Women in Agri-startups.

### Role of women in agriculture

- Women play a decisive role in ensuring Food Security and Preserving local Agro-Biodiversity.
- Women is not only confined to agriculture after India's independence but their contribution is visible in all sectors including defence, space, administration, sports etc.

### About the webinar

- It was organized for creating Value with Supply Chain Management” in the series of events for celebrating MahilaKisanDiwas 2021.
- The Webinar on Women in Agri-Startups focused on Enabling Women Entrepreneurship in Agribusiness; Strategy and Schemes to support Agri-Startups in India; Technology transfer to Startups for Commercialization; Value Chain
- Management and Challenges faced by Agri-StartupsAgripreneures.
- Agriculture sector employs 80% of all economically active women; they comprise 33% of the agricultural labour force and 48% of self-employed farmers.
- The focus is on the formation of women Self Help Groups (SHGs), Women Federations and Women Farmer Producer Organisations; capacity building interventions; linking them to microcredit; enhancing their access to information and ensuring their representation in decision making bodies at various levels.

### Significance

With women predominant at all levels of production- pre-harvest, post-harvest processing, packaging, marketing- of the agricultural value chain, to increase productivity in agriculture, it is imperative to adopt gender-specific interventions.

## Ganga Utsav 2021

### In news

National Mission for Clean Ganga (NMCG) celebrates Ganga Utsav every year to mark the anniversary of announcement of River Ganga as the ‘National River’ i.e. 4th November.

### Aim

This year, the aim will be to take Ganga Utsav 2021 to the various river basins in India and promote the celebration of ‘Nadi Utsav’ (River Festival).

### Objective

- The objective of the Utsav (festival) is to promote stakeholder engagement and ensure public participation under the aegis of the Ganga Knowledge Center.
- The Utsav highlights the significance of “Jan Bhagidari” in the revival of Ganga, with a focus on encouraging stakeholder engagement and public participation towards the rejuvenation of river Ganga.

### Details

- This year’s Ganga Utsav is being organised from 1<sup>st</sup> to 3<sup>rd</sup> November, 2021. ‘Ganga Utsav 2021 – The River Festival’ will be celebrating not just River Ganga but all the rivers across the country.



- Activities have been planned across 150 districts – 112 in the Ganga belt and the remaining along other major rivers.
- The celebrations this year will be part of the ongoing celebrations for 75 years of Independence and Azadi ka Amrit Mahotsav.
- Through Ganga Utsav, NMCG targets strengthening of the public – river connect.
- Since the last four years this event has acted as an important platform to establish connect with people from all walks of life.
- The Utsav celebrates the mystical and cultural river Ganga through storytelling, folklore, dialogues with eminent personalities, quizzes, displaying traditional artforms, dance and music performances by renowned artists, photo galleries and exhibitions and much more.

