

## **4<sup>th</sup> Oct -10<sup>th</sup> October Weekly Compilation**

### **(The Hindu+ Indian Express + PIB + Other World Wide News)**

#### **❖ Mahabahu Brahmaputra River Heritage Center (Source: The Hindu)**

**Why in News:** Vice-President has recently inaugurated the Mahabahu Brahmaputra River Heritage Centre in Guwahati.

#### **Mahabahu Brahmaputra River Heritage Centre**

- The Brahmaputra River Heritage Centre has been set up in a nearly 150-year-old Scottish-type wooden bungalow after an elaborate restoration. The Centre is located in Guwahati's Barphukanar Tila, meaning Barphukan's Hillock.
- The centre has on display the history of the Battle of Saraighat, the heritage of Assamese war boats, an amphitheatre, an exhibition space, a cafeteria and two viewing decks.

#### **Barpukhan hillock**

- Barpukhan was a post equivalent to Governor-General created by Ahom king Pratap Simha or Susengpha (1603-1641). The hillock in the Brahmaputra has been mentioned in ancient scriptures as Mandrachal. The hillock is used to be the 17th-century military office of the Ahom rulers.
- From this hillock only, Ahom General Lachit Barpukhan launched the Battle of Saraighat in March 1671 to inflict the most crushing defeat on the Mughals.
- Captain Archibald Bogle, posted as the Assistant Commissioner and Collector of Kamrup district in the 1850s, had the bungalow built.
- Post-Independence, it continued to be the Deputy Commissioner's Bungalow until 2011.

#### **❖ SWACHH BHARAT MISSION URBAN 2.0 (Source: PIB)**

**Why in News:** Prime Minister launched Swachh Bharat Mission-Urban 2.0 and Atal Mission for Rejuvenation and Urban Transformation 2.0. Both of them will be implemented by the Ministry of Housing and Urban Affairs (MoHUA).

#### **Swachh Bharat Mission-Urban 2.0**

- **The mission would be implemented over five years from 2021 to 2026.** The focus of SBM-U 2.0 will be on sustaining the sanitation and solid waste management outcomes achieved and accelerate the momentum generated, thus taking Urban India to the next level of 'Swachhata'.
- The aim of 'Swachh Bharat Mission-Urban 2.0' is to "make the cities completely free of garbage".

### **Key components of SBM 2.0**

- Ensuring complete access to sanitation facilities to serve additional populations migrating from rural to urban areas in search of employment and better opportunities.
- Complete liquid waste management in cities with less than 1 lakh population to ensure that all wastewater is safely contained, collected, transported and treated.
- Under Sustainable Solid Waste Management, greater emphasis will be on source segregation.
- Special focus will be put on the well-being of sanitation and informal waste workers.
- Material Recovery Facilities and waste processing facilities will be set up, with a focus on phasing out single-use plastic. Construction & demolition waste processing facilities will be set up.
- Mechanical sweepers deployed in National Clean Air Program cities and in cities with more than 5 lakh population.
- Remediation of all legacy dumpsites will also be done under the mission.

### **Expected outcomes of SBM 2.0**

- It is expected that under Swachh Bharat Mission-Urban 2.0, all statutory towns will become at least ODF+; and all cities with <1 lakh population ODF++.
- Systems and processes will be in place so that all waste water is safely treated and optimally reused and no untreated wastewater pollutes water bodies.
- Regarding Solid Waste Management, it is expected that all cities will achieve at least 3-star Garbage Free certification under SBM-U 2.0

### **AMRUT 2.0**

- AMRUT2.0 aims to make around 4,700 towns/cities' water secure'. It will build upon the progress of AMRUT to address water needs, rejuvenate water bodies, better manage aquifers, reuse treated wastewater, thereby promoting circular economy of water.
- The Objective of AMRUT 2.0 is to provide 100% coverage of water supply to all households in around 4,700 ULBs.

## Key components of AMRUT 2.0

- It will provide 100% coverage of sewerage and septage in 500 AMRUT cities, by providing 2.64 crore sewer connections/ septage connections, thereby benefitting around 10.6 crores people.
- Rejuvenation of water bodies and urban aquifer management will be undertaken to augment sustainable freshwater supply.
- Up-scaling from 500 cities covered under AMRUT with 1 lakh+ population to all 4,372 cities, covering 100% urban India.
- It will promote a circular economy of water through the formulation of the City Water Balance Plan for each city, focusing on recycle/reuse of treated sewage, rejuvenation of water bodies and water conservation.
- Pey Jal Survekshan will be conducted in cities to ascertain the equitable distribution of water, reuse of wastewater and mapping of water bodies.
- Technology Sub-Mission for water will leverage the latest global technologies in the field of water.
- The AMRUT-2.0 Mission will promote Public-Private partnerships (PPP). It will also promote the GIG economy and on-boarding of youth & women. Further, a target based capacity building program will be conducted for all stakeholders including contractors, plumbers, plant operators, students, women and other stakeholders.

## ❖ SPECIAL CAMPAIGN FOR DISPOSAL OF PENDING GRIEVANCES (The Hindu)

**Why in News:** The government has launched a dedicated Portal and a Special Campaign for disposal of pending grievances in the Government of India during the period 2nd October to 31st October 2021. **The campaign will focus on citizen-centric governance to bring “Ease of Living” for the common man.**

### About the campaign

- The Special Campaign is aimed at ensuring timely and effective disposal of Public Grievances, references from MPs, State Governments, Inter-Ministerial Consultations and Parliamentary Assurances by each Ministry/Department during the campaign period.
- During this special campaign, files of temporary nature may be identified and weeded out as per the extant instructions, and redundant scrap material and obsolete items may be discarded to improve cleanliness at workplaces.
- **Department of Administrative Reforms & Public Grievances (DARPG) will be the nodal Ministry to monitor the implementation of this campaign.**

**DARPG has developed a dedicated Dashboard for the campaign, and also issued detailed guidelines in this regard to all Ministries/Departments of Government of India.** Each Ministry/Department has designated a Nodal Officer for the special campaign. The progress should be monitored by the Secretaries/HOD on daily basis.

- There had been a 10-fold increase in public grievance cases since 2014. The public grievances have increased from 2 lakh in 2014 to nearly 22 lakhs at present, with more than 96 percent disposal of cases.
- Ministries and Departments have identified over 2 lakh cases of pending Public Grievances and 4.5 lakh physical files for weeding. To resolve them, a dedicated campaign has been launched.

## **❖ STATE NUTRITION PROFILES (PIB)**

**Why in News:** NITI Aayog, in a joint effort with International Food Policy Research Institute (IFPRI), the Indian Institute of Population Sciences (IIPS), UNICEF and the Institute of Economic Growth (IEG) has launched 'The State Nutrition Profiles' for 19 States and Union Territories.

### **State Nutrition Profiles (SNPs)**

- The SNPs give insights on nutrition outcomes, immediate and underlying determinants and interventions based on National Family Health Survey (NFHS) rounds 3, 4 and 5.
- The SNPs include a comprehensive compilation of crucial data that can positively affect policy decisions and facilitate research in the area.
- They contain the trend analysis of key indicators such as wasting, stunting, anemia, underweight and overweight and NCDs (Diabetes and High blood pressure) showcase the variability of performance across districts.
- The reports highlight the best and worst-performing districts, the highest-burden districts and top coverage districts of the country.

### **How the SNPs are framed?**

- The SNPs are based on the headcount-based analyses and use of data from NFHS-5 to provide evidence that helps identify priority districts and the number of districts in the state with public health concerns as per WHO guidelines.
- The SNPs include a colour-coded dashboard to compare the coverage of nutrition interventions across all the districts in the state.

- Each SNP has incorporated key takeaways for children, women and men and identifies areas where the state has the potential to improve further.

## ❖ NOBLE PRICE FOR MEDICINE

(Source: Express)

**Why in News:** Recently, two United States-based scientists, David Julius and Ardem Patapoutian, have been awarded the 2021 Nobel Prize for Physiology/Medicine for their discoveries of receptors for temperature and touch.

They have focused their work on the field of somatosensation, that is the ability of specialised organs such as eyes, ears and skin to see, hear and feel. **Somatosensation is a collective term for the sensations of touch, temperature, body position, and pain recognized through neural receptors in the skin and certain internal organs.**

- **Nobel prize in the medicine has been awarded for the discoveries of receptors for temperature and touch.**
- Artificial sensors like thermometer are very common temperature sensors that can perceive changes in temperature. Similarly, in the human body, there are sensors to sense. However, only very specific proteins molecules relay these signals to the nervous system. These sensors were not identified yet.
- Now scientists have discovered the molecular sensors in the human body that are sensitive to heat, and to mechanical pressure, and make us “feel” hot or cold, or the touch of a sharp object on our skin.

### Mechanism of receptors

- Artificial detectors like a smoke detector send an alarm when it senses smoke beyond a certain threshold.
- Similarly, when something hot or cold touches a body, heat receptors open up a passage for specific chemicals, like calcium ions, through the membrane of nerve cells. The chemical inside the cell causes a small change in electrical voltage, which is picked up by the nervous system. It enables the brain to perceive high temperatures.
- These detectors can also detect temperature or pressure changes inside the body. For example, when our urinary bladder is full, the pressure in the bladder increases. This change in pressure is sensed by the pressure receptors and relayed to the nervous system which creates this urge to relieve oneself.

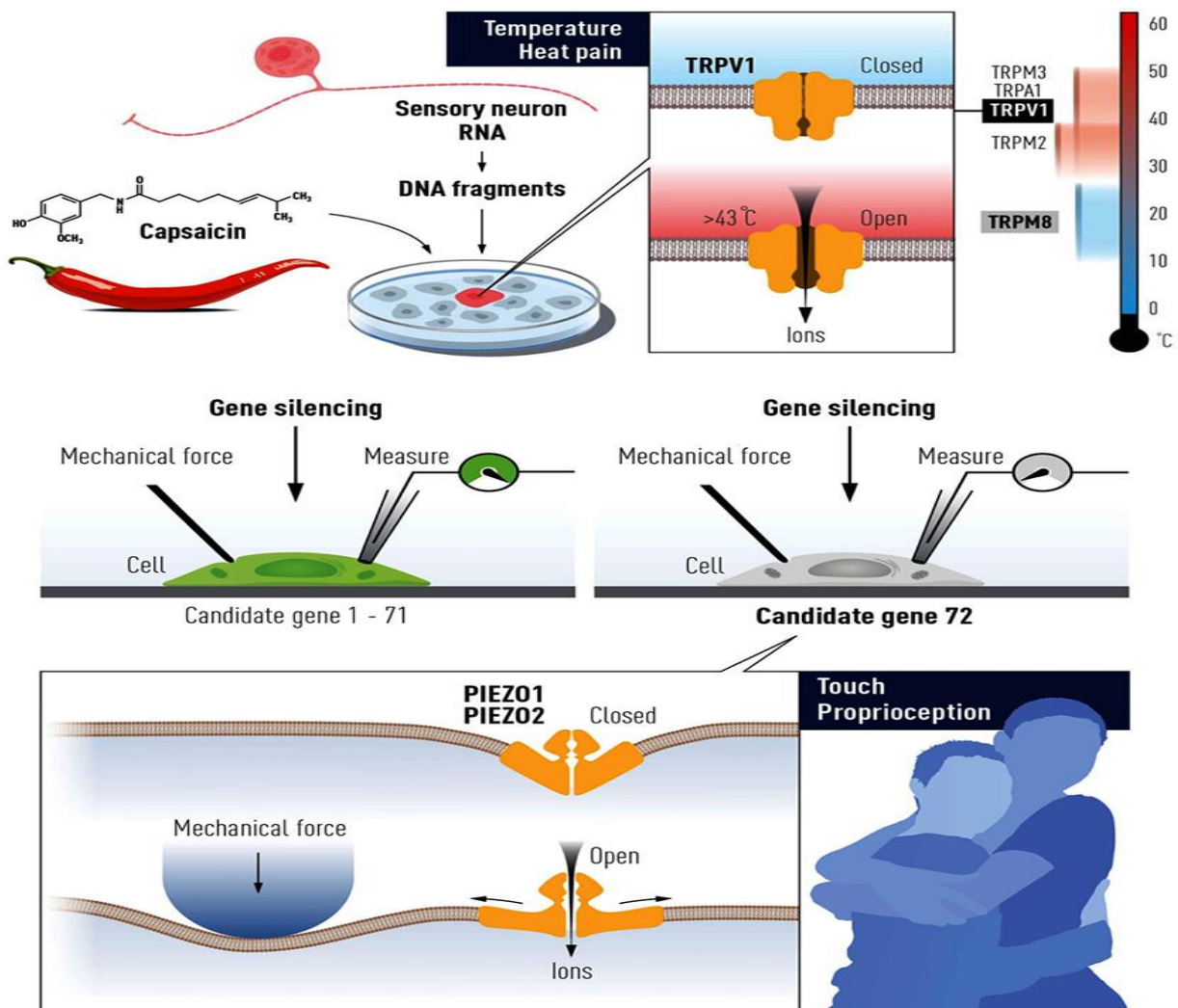
### About the Discoveries

## David Julius

- He discovered TRPV1, a heat-sensing receptor.
- His findings on the skin's sense of temperature was based on how certain cells react to capsaicin, the molecule that makes chili peppers spicy, by simulating a false sensation of heat.

## Ardem Patapoutian

He discovered two mechanosensitive ion channels known as the Piezo channels. He is credited for finding the cellular mechanism and the underlying gene that translates a mechanical force on our skin into an electric nerve signal



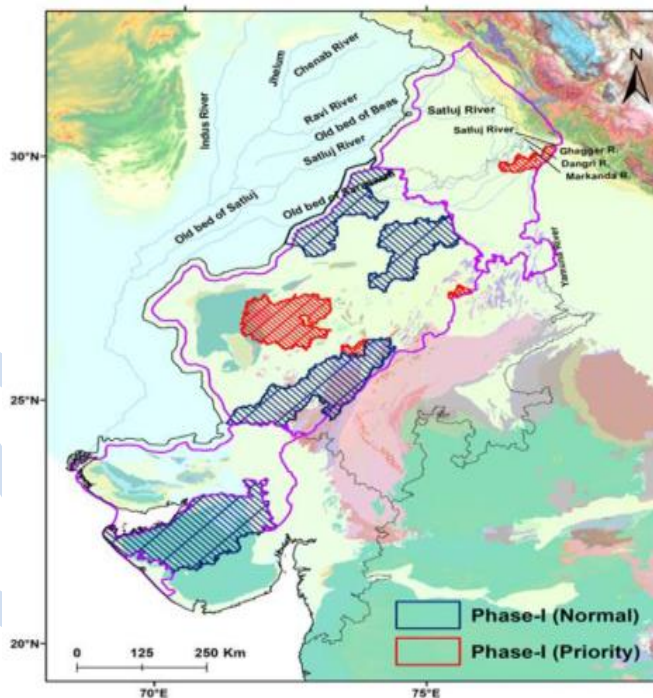
## ❖ HELI BORNE SURVEY

(Express)

**Why in News:** The Central Ground Water Board, Ministry of Jal Shakti and CSIR-NGRI (National Geophysical Research Institute), Hyderabad have signed an agreement for use of advanced heli-borne geophysical survey and other scientific studies in Arid Regions.

### Heli-Borne Survey

- The Heli-Borne Survey aims to conduct High-resolution aquifer mapping using heliborne geophysical studies.
- It includes studies such as identification of Sites for artificial recharge, 3D Geophysical model, Geophysical Thematic maps, Aquifer system with relatively fresh and saline zones.
- The survey also aims to map the Spatial and depth-wise distribution of the paleo-channel networks if any and their linkage with the aquifer systems.
- The survey regions include parts of the States of Rajasthan, Gujarat, Haryana, Punjab, and Himachal Pradesh covering an area of 3.88 lack sq. km under the Aquifer Mapping Program.
- The expected outcome includes selecting suitable sites for groundwater withdrawal and water conservation through artificial or managed aquifer recharge.
- Developed by Council of Scientific and Industrial Research (CSIR)-National Geophysical Research Institute (NGRI), it will provide information about level, quantity, quality and information of ground water.
- The NGRI is a geo-scientific research organization established in 1961 under the CSIR.
- The Heli-borne geophysical mapping technique of CSIR-NGRI provides a high-resolution 3D image of the subsurface up to a depth of 500 metres below the ground.
- The main advantages of the Heliborne geophysical survey is that it is fast, highly data dense, precise and economical.



- This survey will be carried out in two phases, of which the first phase comprises an area spanning 1 lakh sq km.

This includes 65,000 sq km in Rajasthan, 32,000 sq km in Gujarat and 2,500 sq km in Haryana. It is to be implemented in collaboration with the Ministry of Jal Shakti as a part of National Aquifer Mapping

### National Aquifer Mapping and Management Program (NAQUIM)

- It was launched in 2012 by the Ministry of Water Resources (now Ministry of Jal Shakti). Central Ground Water Board (CGWB) is implementing the NAQUIM for aquifer mapping in the country.
- The program aims to identify and map aquifers at the micro level to quantify the available groundwater resources. It also aims to promote participatory groundwater management.

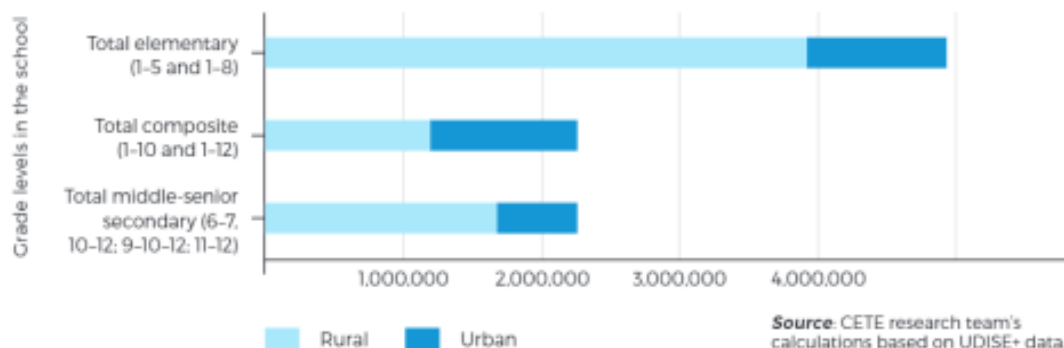
### ❖ State of the Education Report (SOER) for India: “No Teachers, No Class (Livemint)

**Why in News:** United Nations Educational, Scientific and Cultural Organization (UNESCO) has recently released its 2021 State of the Education Report (SOER) for India: “No Teachers, No Class”.

### State of the Education Report (SOER) for India

- It is an annual flagship report of UNESCO New Delhi. So far, two editions have been released in the past and this is the third edition of the State of Education Report.
- The UNESCO analysed two data sets for the preparation of the report. These are the Unified District Information System for Education (UDISE+) 2018-19 round and the Periodic Labour Force Survey 2018-19.

Number of teachers by school type (grades and levels) and rural or urban location, 2018/19



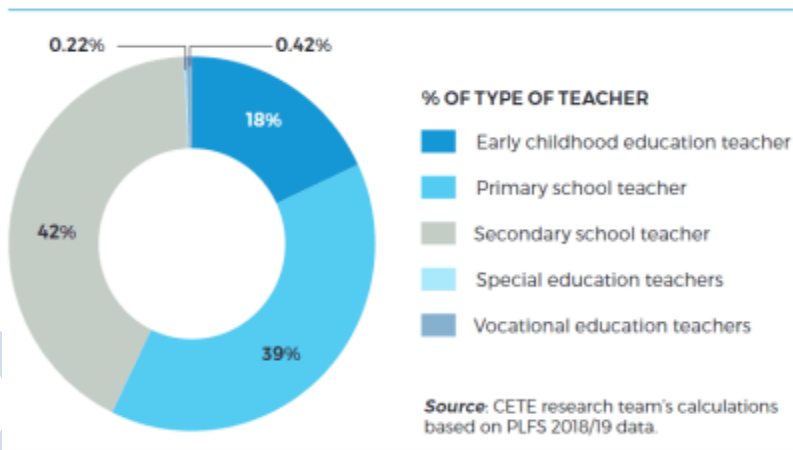


**Lack of teachers:** The data suggests that the teaching cadre is generally young, with over 65% of teachers aged less than 44 years. But, in about 15 years, 27% of the current workforce will need to be replaced. The workforce has a deficit of over 1 million teachers (at current student strength).

Apart from that, almost, 69% of teachers in India are working without job contracts in private schools.

**Poor student-teacher ratio:** The overall number of teachers (around 9.5 million) looks perfect to maintain a good pupil-teacher ratio. But there is a segmental disparity. For instance, the pupil-teacher ratio (PTR) at senior secondary schools is 47:1 as against 26:1 of the overall school system.

Proportion of teachers by level of education and type of programme, 2018/19



**Prevalence of single-teacher institutions:** At the national level, 7% of schools are single-teacher schools, the percentage is far higher in several states. Around 10% to 15% of schools in several states were single-teacher institutions.

**Women make half of the teacher workforce:** Half of India's 9.43 million school teachers are women. In some states and union territories (UTs) over 70% of teachers are women. These include Chandigarh (82%), Delhi (74%), Kerala (78%), Punjab (75%) and Tamil Nadu (75%).

**Low retention rates:** Overall retention is 74.6% for elementary education and 59.6% for secondary education in 2019-20.

**Low access to the Internet:** Access to the internet in schools is 19% all over India – only 14% in rural areas compared to 42% in urban areas.

**Technological challenges:** The use of technology in education has exposed a range of issues – lack of devices and Internet bandwidth for a significant proportion of students, lack of preparedness of teachers in the use of technology, and lack of resources in Indian languages.

## ❖ **MITRA SHAKTI AND JIMEX**

**Why in News:** India take part in 5th edition of India – Japan Maritime Bilateral Exercise, JIMEX and 8th edition of India-Sri Lanka bilateral joint exercise Mitra Shakti this week.

### **Mitra Shakti**

- 8th edition of India-Sri Lanka bilateral joint military exercise Mitra Shakti has commenced in Ampara in Sri Lanka. The two-week-long exercise is being conducted from 04 to 15 October 2021.
- 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.

### **JIMEX**

- 5th 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 the Arabian Sea from 06 to 08 October 2021.
- JIMEX-21 aims to develop a common understanding of operational procedures and enhance inter-operability through the conduct of a multitude of advanced exercises, across the entire spectrum of maritime operations.

### **Other exercises between India and Japan**

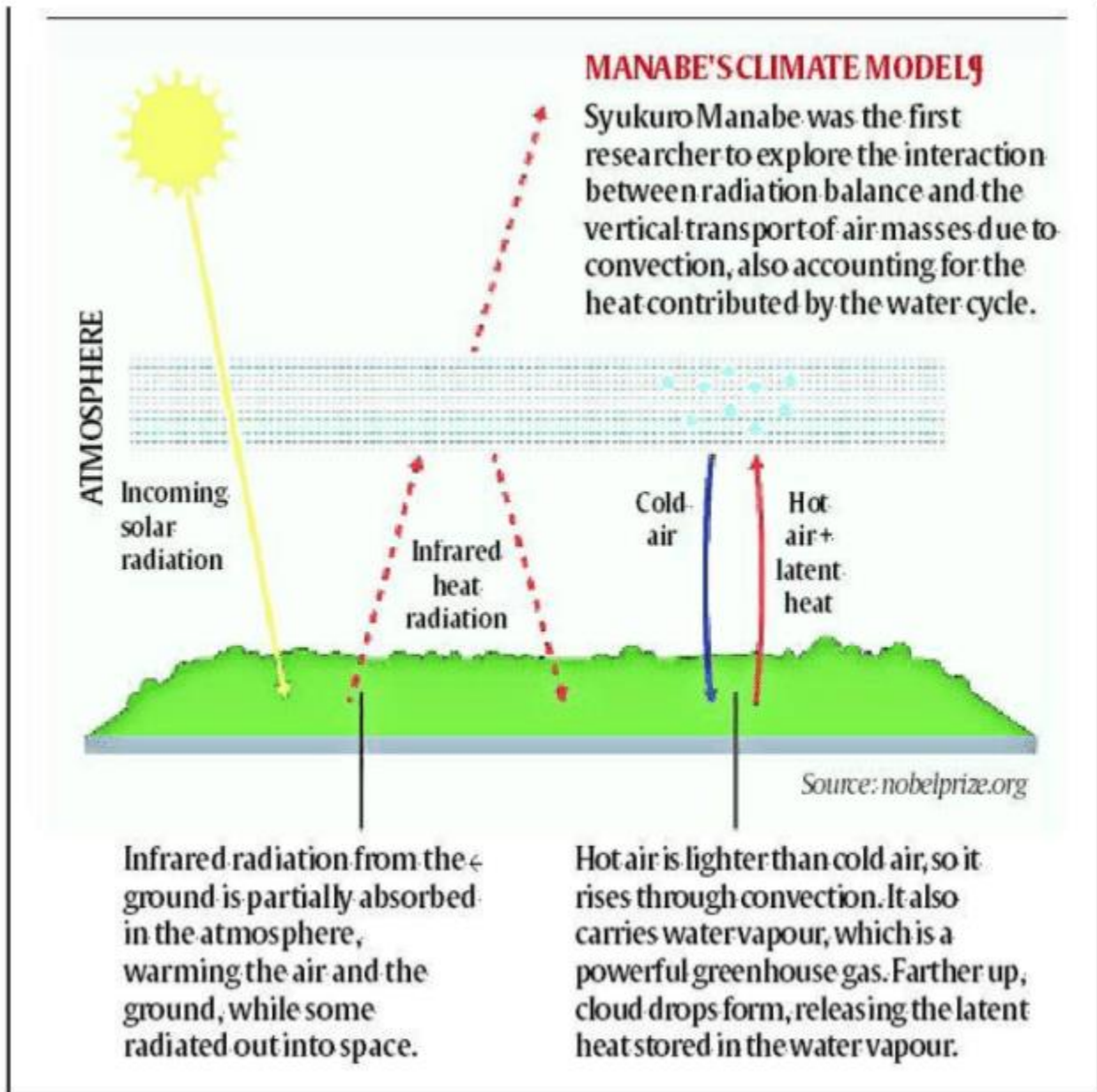
- Dharma Guardian: Joint Military Exercise that started off in 2018. The latest one was conducted in 2019 in Mizoram.
- SHINYUU Maitri: It is a joint exercise between Indian Air Force and the Japanese Air Self Defence Force (JASDF).

## ❖ **NOBLE PROZE FOR PHYSICS**

**(The Hindu)**

**Why in News:** Nobel Prize for physics 2021 has been awarded to scientists Syukuro Manabe, Klaus Hasselmann and Giorgio Parisi. This is the first time climate scientists have been awarded the Physics Nobel.

### **About the discovery**



- Manabe and Hasselmann were cited for their work in “the physical modelling of Earth’s climate, quantifying variability and reliably predicting global warming”.
- Manabe demonstrated how an increase in the amount of carbon dioxide in the atmosphere would increase global temperatures, laying the foundations for current climate models.
- Hasselmann created a model that linked weather and climate, which helps us to explain why climate models can be reliable despite the seemingly chaotic nature of the weather.

- Giorgio Parisi “built a deep physical and mathematical model” to understand complex systems in different fields – These are systems with a very high degree of randomness; weather and climate phenomena are examples of complex systems.

This Nobel Prize would probably help in further mainstreaming climate science. Further, it will also convince people and governments, that are not convinced of the reality of the interconnectedness of anthropogenic activities and climate change.

The Intergovernmental Panel on Climate Change (IPCC) had won the Peace Nobel in 2007, an acknowledgement of its efforts in creating awareness for the fight against climate change. A Chemistry Nobel to Paul Crutzen in 1995, for his work on the ozone layer, is considered the only other time someone from atmospheric sciences has won this honour.

## ❖ **NOBLE PRIZE FOR CHEMISTRY**

The 2021 Nobel Prize in Chemistry was awarded to Benjamin List and David MacMillan for the development of asymmetric organocatalysis.

### **About the Development:**

- They have developed a new and ingenious tool for molecule building: organocatalysis.
- Many research areas and industries are dependent on chemists’ ability to construct molecules that can form elastic and durable materials, store energy in batteries or inhibit the progression of diseases. This work requires catalysts.
- According to researchers, there were just two types of catalysts available: metals and enzymes. Catalysts are any substance that increases the rate of a reaction without itself being consumed.
- In 2000, they, independent of each other, developed a third type of catalysis. It is called asymmetric organocatalysis and builds upon small organic molecules.

### **Significance**

- Its uses include research into new pharmaceuticals and it has also helped make chemistry greener.
- Both these sets of catalysts (metals and enzymes) had limitations.
- Heavier metals are expensive, difficult to mine, and toxic to humans and the environment.
- Despite the best processes, traces remained in the end product; this posed problems in situations where compounds of very high purity were required, like in the manufacture of medicines.

- Also, metals required an environment free of water and oxygen, which was difficult to ensure on an industrial scale.
- Enzymes on the other hand, work best when water is used as a medium for the chemical reaction. But that is not an environment suitable for all kinds of chemical reactions.

## **Organocatalysis**

- Organic compounds are mostly naturally-occurring substances, built around a framework of carbon atoms and usually containing hydrogen, oxygen, nitrogen, sulphur, or phosphorus.
- Life-supporting chemicals like proteins, which are long chains of amino acids (carbon compounds containing nitrogen and oxygen) are organic.
- Enzymes are also proteins, and therefore, organic compounds. These are responsible for many essential biochemical reactions.
- Organocatalysts allow several steps in a production process to be performed in an unbroken sequence, considerably reducing waste in chemical manufacturing.
- Organocatalysis has developed at an astounding speed since 2000. Benjamin List and David MacMillan remain leaders in the field, and have shown that organic catalysts can be used to drive multitudes of chemical reactions.
- Using these reactions, researchers can now more efficiently construct anything from new pharmaceuticals to molecules that can capture light in solar cells.

## **Asymmetric Organocatalysis**

The process called asymmetric organocatalysis, has made it much easier to produce asymmetric molecules - chemicals that exist in two versions, where one is a mirror image of the other.

Chemists often just want one of these mirror images - particularly when producing medicines - but it has been difficult to find efficient methods for doing this.

Some molecules with mirror versions have different properties. An example is the chemical called carvone, which has one form that smells like spearmint and a counterpart that smells like the herb, dill. Different versions of the same molecule might have different effects when ingested. Then it becomes important to be able to make only the mirror image of a drug that has the desired physiological effect.

The government has approved the setting up of seven PM MITRA textiles parks, following the “Union Budget for 2021-22” commitments, with a total outlay of Rs. 4,445 crores in a period of 5 years.

### **❖ “PM-MITRA” Scheme**

- The scheme aims to realize the vision of building an Aatma Nirbhar Bharat by positioning India strongly on the Global textiles map. It is inspired by the 5F vision of Hon'ble Prime Minister –Farm to Fibre to Factory to Fashion to Foreign.
- The scheme aims to create a world-class industrial infrastructure that would attract cutting-edge technology and boost FDI and local investment in the sector.
- Sites for the scheme will be selected by a Challenge Method, based on objective criteria for Greenfield / Brownfield sites. The Centre is receiving proposals from states for the ready availability of contiguous and encumbrance-free land parcels of 1,000+ acres along with other textiles related facilities & ecosystems.

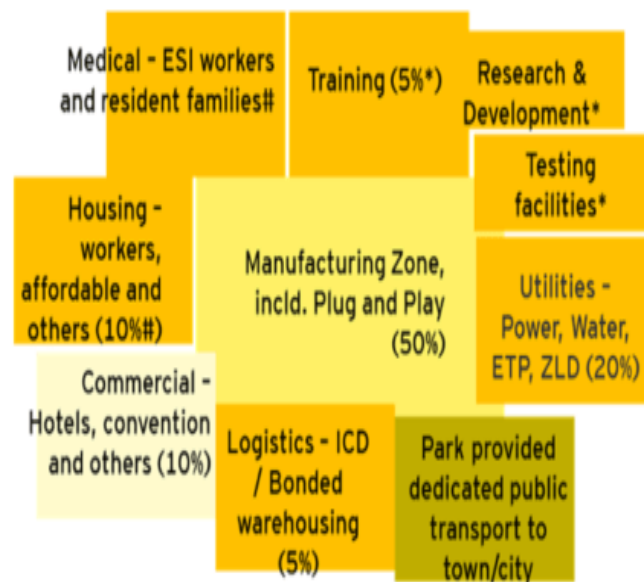
### What are the various supports provided by the government under the scheme?

- Competitiveness Incentive Support (CIS): The government will provide a fund of ₹ 300 Crore to 'investors' setting up production facilities to incentivize manufacturing units to get established.
- For a Greenfield Park 'developer', the centre will provide 30% of Capital Support from the Project Cost, with a cap of ₹ 500 Cr.
- For a Brownfield sites 'developer', the centre will provide 30% of Capital Support from the Project Cost, with a cap of ₹ 200 Cr.

PM MITRA park will be developed by a Special Purpose Vehicle which will be owned by the State Government and Government of India in a Public-Private Partnership (PPP) Mode. The Master Developer will develop and also maintain the park during the concession period.

**Core Infrastructure:** Incubation Centre & Plug & Play facility, Developed Factory Sites, Roads, Power, Water and Waste Water system, Common Processing House and other related facilities e.g., Design Centre, Testing Centers etc.

**Support Infrastructure:** Workers' hostels & housing, logistics park, warehousing, medical, training & skill development facilities.



- The scheme intended to generate approximately 1 lakh direct and 2 lakh indirect employment per park.
- The Scheme will offer an opportunity to create an integrated textiles value chain right from spinning, weaving, processing/dyeing and printing to garment manufacturing at one location that would ease business and will reduce logistics costs of the Industry.

## ❖ **MOSQUIRIX**

**(Source: Express)**

**Why in News:** The new vaccine “RTS,S/ASO1 (RTS.S)” with its trade name “Mosquirix” was endorsed by the World Health Organisation (WHO) recently. This is the first and only vaccine shown to have the capability of significantly reducing malaria, and life-threatening severe malaria, in tests on young African children.

### **Mosquirix**

- Mosquirix has been developed by British pharmaceutical company GlaxoSmithKline in partnership with the PATH Malaria Vaccine Initiative. It was approved for the pilot program in 2015.
- The vaccine acts against *P. falciparum*, the most deadly malaria parasite globally, and the most prevalent in Africa.
- The malaria vaccine should be provided in a schedule of 4 doses in children from 5 months of age for the reduction of malaria disease and burden.

Among children who received 4 doses in large scale clinical trials, the vaccine was able to prevent approximately 4 in 10 cases of malaria over a 4-year period. More than 800,000 children in Ghana, Kenya, and Malawi have been vaccinated, and are benefiting from the vaccine as part of a pilot program.

## ❖ **HIGH AMBITION COALITION**

**(Source: PIB)**

**Why in News:** At a ceremony held between the French and Indian governments in New Delhi, India officially joined the High Ambition Coalition for Nature and People.

- **The High Ambition Coalition for Nature and People was initiated at the “One Planet Summit” in Paris in January 2021. The coalition aims to promote an international agreement to protect at least 30 % of the of world’s land and ocean by 2030 (30×30 target).**
- The 30×30 target is a global target that aims to halt the accelerating loss of species and protect vital ecosystems that are the source of our economic security.

- HAC is co-chaired by Costa Rica and France, and by the United Kingdom as Ocean co-chair.
- Members: At present, the group has more than 70 countries encouraging the adoption of the global goal to protect 30×30. The members of HAC currently include a mix of countries in the global north and south. These include European, Latin American, Africa and Asia countries are among the members.
- **India is the first BRICS country to join the HAC.**

### **Why 30×30 target is needed?**

- Currently, an estimated 15% of the world's land and 7% of the ocean are protected. In order to address both the biodiversity crisis and the climate crisis, there is growing scientific research that half of the planet must be kept in a natural state. Some research papers have suggested that the number should be even higher.
- Despite this, experts agree that a scientifically credible and necessary interim goal is to achieve a minimum of 30% protection by 2030. So, to achieve this, the world needs to double the current land protections and more than quadruple current ocean protections.

India is a major player in biodiversity protection. So, joining the HAC is a real game-changer and will boost multilateral efforts to protect 30×30.

There is a high-level biodiversity meeting, hosted by China, to take place virtually in October this year. The meeting will focus on key aspects of the biodiversity treaty to be finalized in 2022. The global 30×30 goal is currently a centre piece of the treaty. So, India's membership will boost the adoption of the biodiversity treaty.

### **❖ Global Multidimensional Poverty Index 2021**

**Why in News:** Recently, Global Multidimensional Poverty Index 2021 was released by the United Nations Development Programme (UNDP) and the Oxford Poverty & Human Development Initiative (OPHI).

The Index considers data from 109 countries and 5.9 billion people.

#### **Multidimensional Poverty Index**

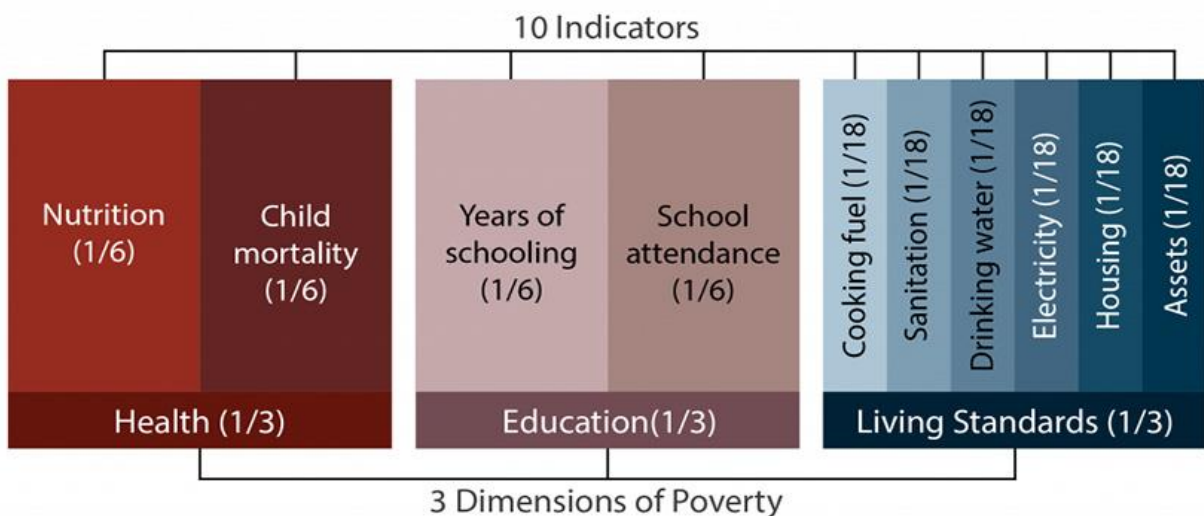
- The Multidimensional Poverty Index was launched by the UNDP and the OPHI in 2010.
- MPI is based on the idea that poverty is not uni-dimensional (not just depends on income and one individual may lack several basic needs like education, health etc.), rather it is multidimensional.



- The index shows the proportion of poor people and the average number of deprivations each poor person experiences at the same time.

MPI uses three dimensions and ten indicators which are:

- Education: Years of schooling and child enrollment (1/6 weightage each, total 2/6);
- Health: Child mortality and nutrition (1/6 weightage each, total 2/6);
- Standard of living: Electricity, flooring, drinking water, sanitation, cooking fuel and assets (1/18 weightage each, total 2/6).



- A person is multi-dimensionally poor if she/he is deprived in one third or more (means 33% or more) of the weighted indicators (out of the ten indicators). Those who are deprived in one half or more of the weighted indicators are considered living in extreme multidimensional poverty.
- MPI is significant as it recognizes poverty from different dimensions compared to the conventional methodology that measures poverty only from the income or monetary terms.
- The report mentions that there are 1.3 billion multi-dimensionally poor people globally.
- The top five countries with the largest number of people living in multidimensional poverty are India (381 million), Nigeria (93 million), Pakistan (83 million), Ethiopia (77 million) and the Democratic Republic of the Congo (56million).
- Women and Children: Almost two-thirds of global multi-dimensionally poor people – 836 million- live in households in which no female member has completed at least six years of schooling. These people live mostly in Sub-Saharan Africa (363 million) and South Asia (350 million).
- The report also found that half of global multi-dimensionally poor people are children.