

**August - 27**

## **TNPSC BITS**

- ❖ Dabur India have signed an MoU to invest Rs 400 crore to set up its first manufacturing unit in South India at SIPCOT food park in Tindivanam, Tamil Nadu.
- ❖ Tamil Nadu's CM inaugurated the State Emergency Operations Centre (SEOC), which has been upgraded as the Multi Hazard Early Warning Centre at in Chepauk, Chennai.
- ❖ Tamil Nadu Chief Minister has issued directions nationalising all the literary works of late DMK leader and former CM M. Karunanidhi without royalty.
  - Among his literary works are 15 novels, 20 dramas, 15 short stories, over 200 poems, among others.
- ❖ The Christian Medical College, Vellore and IIT-Madras have jointly developed an innovative, portable, and affordable robotic solution for hand movement therapy, and making the physical and occupational therapy for stroke recovery, timely and effective.
- ❖ India has overtaken China as the world's largest importer of Russian oil - 2.07 million barrels/day in July 2024.
- ❖ Karnataka has the highest number (5,765) of public EV charging stations in the country ahead of States like Maharashtra, Uttar Pradesh, and Delhi.
- ❖ International Day of Remembrance of And Tribute to Victims of Terrorism is annually observed on 21<sup>st</sup> August.
- ❖ International Day Commemorating the Victims of Acts of Violence Based on Religion or Belief is observed annually on 22<sup>nd</sup> August.

## **TAMIL NADU**

### **Chandru committee recommendation on centralized kitchen**

- ❖ Experts expressing concerns about one of the recommendations of the Justice K. Chandru committee, on replacing the on-site cooking of noon-meal for school students with centralised kitchens.
- ❖ The report has recommended the Tamil Nadu government to prohibit students in schools from wearing coloured wristbands, rings, or forehead marks that may indicate their caste and removal of caste appellations in the names of schools.

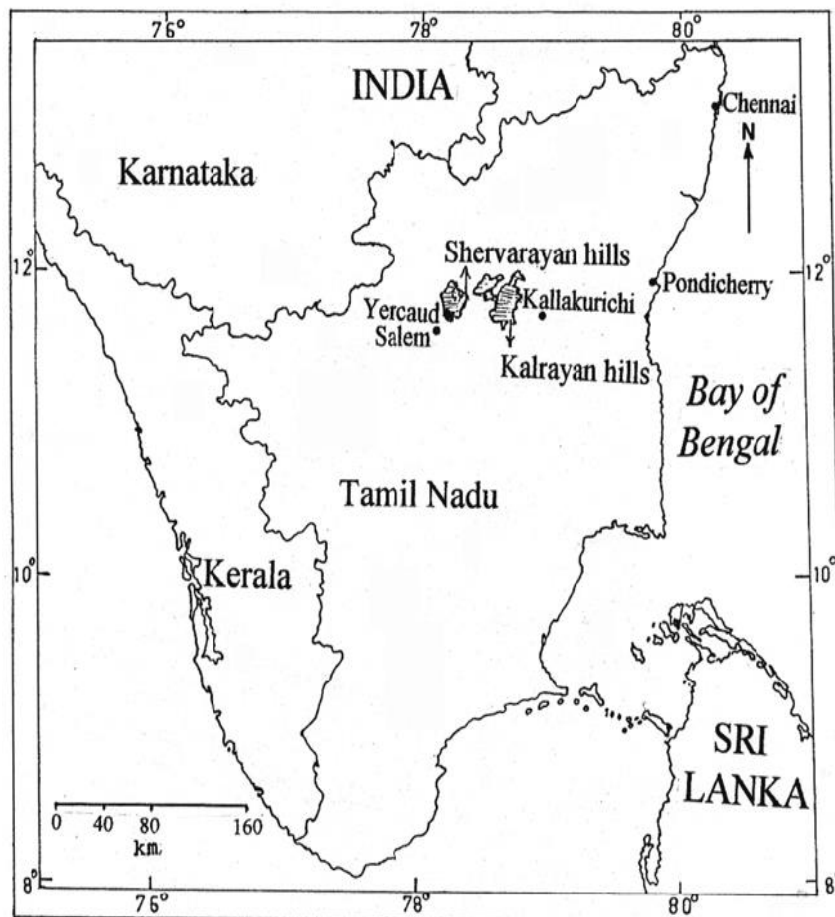
- ❖ The report includes establishing centralised kitchens at block level with adequate staff required for its operation and a distribution network attached to school noon meal centres, instead of having kitchens in every school.
- ❖ In some States, functioning of centralised kitchens, particularly in rural areas, were not up to the mark.
- ❖ When food is cooked in the noon meal centres located within school premises, teachers, students and parents can monitor the cooking activities and the process is accountable.
- ❖ But in the case of centralised kitchens, there is a less chance of the public accountability.
- ❖ Cooking food at noon meal centres in schools generates employment, particularly for women.
- ❖ Nearly 27% of the noon-meal workers belong to Scheduled Caste or Scheduled Tribe communities.



### **Kalvarayan hills overexploitation – Jagirdars**

- ❖ Kalvarayan hills were overexploited by three of its Jagirdars (mini rulers) before the State government takeover in 1976.
- ❖ It is spread over 78,000 hectares in the eastern ghats.
- ❖ The Kalvarayan hills were spread over 600 square kilometres across Kallakurichi, Salem, Tiruvannamalai and Dharmapuri districts.
- ❖ They had an elevation ranging from 600 to 900 metres.

- ❖ The hills were ruled by the Jagirdhars Jadayak Goundan, Ariyak Goundan and Kurumba Goundan for long time.
- ❖ But the Inam Estates (Abolition and Conversion into Ryotwari) Act of 1963 was intended to abolish the Jagirs.
- ❖ The State government passed an order on December 31, 1965 for taking control of the Kalvarayan hills under the 1963 Act.
- ❖ The legal battle ended only in 1976 when the cases were withdrawn and the government finally took over the lands on August 25, 1976.
- ❖ These hills had a population of around 20,000 people as per the 2011 census.



## **NATIONAL**

### **Online platforms for power sector**

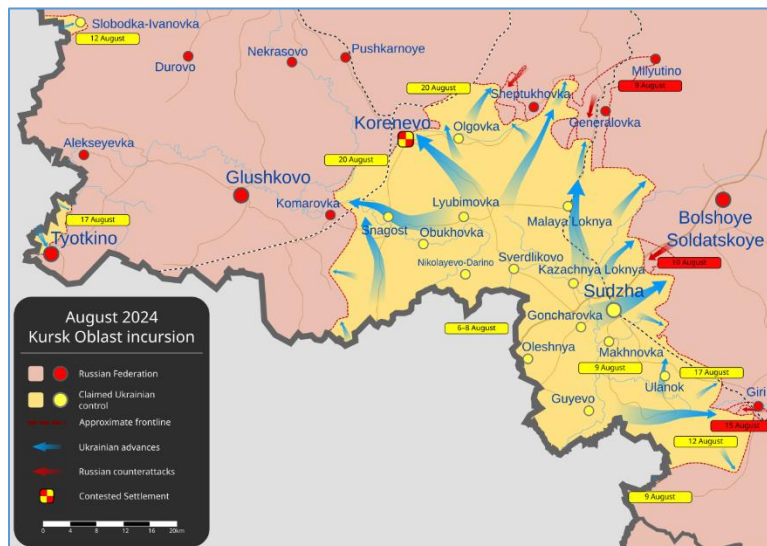
- ❖ The Union Power Ministry has launched three online platforms to enhance the efficiency, transparency, and effectiveness of power sector.

- ❖ The portals are named as Portal for Online Monitoring of Projects –
  - Portal for Online Monitoring of Projects—Thermal
  - Disaster Resilient Infrastructure for Power Sector (DRIPS) and
  - JAL VIDYUT DPR.



## INTERNATIONAL

### Crisis in Kursk region



- ❖ The Ukrainian army launched a brave attack into the Kursk region of the Russian Federation.



- ❖ Ukraine established a military administration for the territory under its control on 15 August 2024.
- ❖ The Kursk region, located in the western Russia and bordering Ukraine, has a population of about 1.2 million.
- ❖ It is located at the confluence of the Kur, Tuskar, and Seym rivers.
- ❖ It lies along the upper Seym River, about 280 miles (450 km) south of Moscow.

## ECONOMY

### UPI Circle



- ❖ NPCI recently introduced a new feature called “UPI Circle.”
- ❖ It allows users to add their family and friends to pay using their account.
- ❖ The new function will help those who depend on others to manage their finances, eventually increasing the number of people making digital payments across India.
- ❖ The system consists of the primary user who is the account holder and controls the secondary user.
- ❖ Also, there are two types of delegation – full and partial.

- ❖ For full delegation, the monthly limit is set at Rs 15,000 per delegation and secondary users are limited to a transaction limit of Rs 5,000.

## SCIENCE AND TECHNOLOGY

### Hypervirulent superbug



- ❖ Dangerous new strains of a "hypervirulent" superbug have been found in 16 countries, including the United States.
- ❖ The superbug, known as hypervirulent Klebsiella pneumoniae (hvKp), is a type of drug-resistant bacteria.
- ❖ It can cause rapidly progressing, deadly infections, even in people with healthy immune systems.
- ❖ It can be found in the environment as well as in the upper throat and gastrointestinal tract of various animals, including humans.

## REPORTS AND INDICES

### Income protection and early warning

- ❖ The report "Income Protection and Early Warning Systems: How India is Building Climate Resilience" was released by the WEF.
- ❖ India lost 33.9 million hectares of crops due to excess rains and an additional 35 million hectares due to drought between 2015 and 2021.
- ❖ Several Indian sectors including agriculture suffered \$159 billion in economic losses in 2021 due to lost working hours from extreme climate impacts.

- ❖ By 2030, India is projected to see a substantial 5.8 per cent decline in working hours – equivalent to 34 million full-time jobs – due to heat stress.
- ❖ India was the first country in South Asia to create a heat action plan after an extreme heat wave in the city of Ahmedabad in 2010.

Year	Natural Disaster	Economic Loss	Insured Loss	Insurance Gap
2020	Cyclone Amphan	\$13 billion	\$1.5 billion	\$11.5 billion
2021	Cyclone Yaas	\$2.5 billion	\$200 million	\$2.3 billion
2021	Tamil Nadu Floods	\$1 billion	\$100 million	\$900 million
2022	Assam Floods	\$3 billion	\$300 million	\$2.7 billion
2023	Himachal Pradesh Floods and Landslides	\$1.5 billion	\$150 million	\$1.35 billion

## Global Education Monitoring Report 2024



- ❖ Over the past 20 years, schools were closed in at least 75% of the extreme weather events, impacting 5 million people or more.
- ❖ In sub-Saharan Africa, the gender parity has not been achieved at any level of education. More girls are out of school than boys.
- ❖ In reading, globally, for every 100 boys, there are 115 girls proficient at the end of lower secondary education.
- ❖ 81% of men and 75% of women owned a mobile phone in 2023.
- ❖ In 2018–23, the share of STEM graduates who were female was 35%.



- ❖ In India, rainfall shocks in the first 15 years of life negatively affected vocabulary at age five and mathematics & non-cognitive skills at age 15.

## PERSONALITIES, AWARDS, AND EVENTS

### Leonard Hayflick

**02 HAYFLICK LIMIT DIAGRAM**


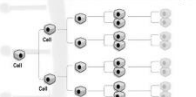
- **Definition:** The **Hayflick limit** refers to the maximum number of times a normal somatic (non-reproductive) cell can divide before cell division stops.
- **Discovery:** Identified by **Leonard Hayflick** in the early 1960s at the University of Pennsylvania.
- **Cell Division Cap:** **Human cells** typically divide **40-60 times** before entering senescence.
- **Aging Mechanism:** The accumulation of senescent cells contributes to the aging process in organisms.



**03 LIFESPAN IMPLICATIONS AND FUTURE RESEARCH**

### TELOMERES AND CELL DIVISION

- **Human Lifespan:** The ultimate Hayflick limit for humans is estimated to be around **125 years**.
- **Beyond Limits:** No amount of diet, exercise, or genetic modification can extend life beyond this limit.
- **The Role of Telomeres:** **Telomeres** are protective caps at the ends of **chromosomes** that shorten with each cell division. When telomeres reach a critical length, they signal the cell to stop dividing, **contributing to aging**.
- **Future Research Directions:** Ongoing **studies** aim to explore the mechanisms behind the Hayflick limit and its implications for health and longevity. Researchers are investigating ways to mitigate the effects of **cellular senescence** and **extend healthy lifespan**.



- ❖ Biomedical researcher Leonard Hayflick passed away recently.
- ❖ He has discovered that normal somatic cells can divide (and thus reproduce) only a certain number of times.
- ❖ He has discovered that cell division in somatic (non-reproductive) cells stopped after roughly 40-60 times.
- ❖ This means that there is an in-built cellular clock in the human body (and that of other organisms) which determines how long one can live.
- ❖ This “ultimate Hayflick limit”, is around 125 years for humans, beyond which no amount of diet, exercise, or even genetic tweaking against diseases can extend the human lifespan.

