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## Energy Transition Index

- Recently, the World Economic Forum (WEF) has released the annual rankings of the global Energy Transition Index.
- The index benchmarks 115 economies on the current performance of their energy systems across

1. Economic development and growth,
2. Environmental sustainability and energy security
3. Access indicators
4. Readiness for transition to secure, sustainable, affordable and inclusive energy systems.

- According to the recent report Sweden has topped the Index for the third consecutive year and is followed by Switzerland and Finland in the top three.
- Only 11 out of 115 countries have made steady improvements in ETI scores since 2015.
- Argentina, China, India and Italy are among the major countries with consistent annual improvements.
- In China (78th), problems of air pollution have resulted in policies to control emissions, electrify vehicles and develop the world's largest capacity for solar photovoltaic (SPV) and onshore wind power plants.
- Scores for the US, Canada, Brazil and Australia were either stagnant or declining.
- India has moved up two positions to rank 74th with improvements in all three dimensions of the energy triangle namely:
    1. Economic development and growth.
    2. Energy access and security.
    3. Environmental sustainability.
- For India, gains have come from a government-mandated renewable energy expansion programme i.e. to add 275 GW by 2027.
- India has also made significant strides in energy efficiency through bulk procurement of LED bulbs, smart meters and programs for labelling of appliances. Similar measures are being experimented to drive down the costs of electric vehicles (EVs).

## World Economic Forum

- It is a Swiss nonprofit foundation established in 1971, based in Geneva, Switzerland.
- Recognized by the Swiss authorities as the international institution for public-private cooperation, its mission is cited as, "committed to improving the state of the world by engaging business, political, academic, and other leaders of society to shape global, regional, and industry agendas".
- Major reports published by WEF:

1. Global Competitiveness Report
2. Global IT Report
3. Global Gender Gap Report
4. Global Risk Report
5. Global Travel and Tourism Report.

## River Nila

- River Nila is also known as Bharathapuzha and Ponnani.
- Amaravathipuzha originating from Thrimoorthy Hills of Anamalais in Tamil Nadu joins with Kalpathipuzha at Parali in Palakkad District and forms Nila.
- It drains in Kerala and Tamil Nadu.
- Malampuzha dam is the largest among the reservoirs built across Bharathapuzha.
- It flows westward through Palakkad Gap (most prominent discontinuity in the Western Ghats) and drains into the Arabian Sea.
- Main Tributaries:

1. Kannadipuzha (Chitturpuzha),
2. Kalpathipuzha (Korapuzha),
3. Gayathripuzha
4. Thuthapuzha

- Recently, a webinar ‘Exploring River Nila’ was organized by Ministry of tourism.

## Spirulina

- Spirulina is a biomass of cyanobacteria (blue-green algae) that can be consumed by humans and animals.
- The three species are Arthrospira platensis, A. fusiformis, and A. maxima.

- It is cultivated worldwide, Arthrospira is used as a dietary supplement or whole food.
- It is also used as a feed supplement in the aquaculture, aquarium, and poultry industries.
- Recently Central Food Technological Research Institute (CFTRI) has developed Spirulina groundnut candy.
- It can provide micro-nutrients and boost immunity of people during this time of pandemic.

## Central Food Technological Research Institute (CFTRI)

- CSIR-Central Food Technological Research Institute (CSIR-CFTRI), is one of the constituent laboratory under the aegis of the Council of Scientific and Industrial Research (CSIR).
- It is head quartered in Mysore, Karnataka.
- CFTRI also has its resource centers in Hyderabad, Lucknow and Mumbai, rendering technical assistance to numerous entrepreneurs.
- The institute has developed over 300 products, processes, and equipment types.
- The institute is engaged in research in the production and handling of grains, pulses, oilseeds, along with spices, fruits, vegetables, meat, fish, and poultry.

## Ultraviolet Light

- UV light from the sun has shorter wavelengths than visible light and, therefore, is not visible to the naked eye.
- The full spectrum of UV radiation is sourced from the sun and can be subdivided into UV-A, UV-B and UV-C rays.
- In this spectrum, UV-C rays are the most harmful and are completely absorbed by the Earth’s atmosphere.
- While both UV-A and UV-B rays are harmful, exposure to UV-B rays can cause DNA and cellular damage in living organisms.
- Increased exposure to it can cause cells to become carcinogenic, thereby increasing the risk of getting cancer.

## Ultraviolet Germicidal Radiation

- Scientists are studying the use of ultraviolet germicidal radiation (UVGI) to detect Coronavirus in schools, restaurants and other public places.
- Through this method, ultraviolet (UV) lights would be able to disinfect contaminated public spaces to stop the transmission of the virus.

- UVGI uses the “destructive properties” of UV light to target pathogens.
- UVGI replicates UV wavelengths that disinfects contaminated spaces, air and water.
- UVGI lamps can also be installed in the corners of a room and alternatively, can be installed in air ducts of ventilation systems or portable or fixed air cleaners.

## Parkinson Disease

- Parkinson’s disease is a chronic, degenerative neurological disorder that affects the central nervous system.
- It damages nerve cells in the brain dropping the levels of dopamine. Dopamine is a chemical that sends behavioral signals from the brain to the body.
- The disease causes a variety of "motor" symptoms (symptoms related to movement of the muscles), including rigidity, delayed movement, poor balance, and tremors.
- Medication can help control the symptoms of the disease but it can't be cured.
- It affects the age group from 6 to 60 years.

## ASyn

- An aggregation of a protein called Alpha-synuclein (ASyn) plays a crucial role in the development of Parkinson’s disease.
- Protein aggregation is a biological phenomenon in which destabilized proteins aggregate (i.e., accumulate and clump together) leading to many diseases.
- Alpha-synuclein is a protein found in the human brain, while smaller amounts are found in the heart, muscle and other tissues.
- In the brain, alpha-synuclein is found mainly at the tips of neurons in specialized structures called presynaptic terminals.
- Presynaptic terminals release chemical messengers, called neurotransmitters.
- The release of neurotransmitters relays signals between neurons and is critical for normal brain function.
- Until now, worldwide studies could not establish any strong relation between ASyn aggregations and subsequent death of neuronal cells observed in Parkinson’s disease.

## Z-Scan Method

- Recently, scientists from IIT (Indian School of Mines) Dhanbad and CSIR-Indian Institute of Chemical Biology (Kolkata) have developed the Z-scan method to monitor the origin as well as the progression of Parkinson's disease in human beings.
- The discovered Z-scan method is expected to help in monitoring both the early as well as late stages of the aggregation of ASyn and death of neuronal cells.

## CSIR-Indian Institute of Chemical Biology

- Indian Institute of Chemical Biology (IICB) was established in 1935 as the first non-official center in India for biomedical research and was included within the aegis of Council of Scientific and Industrial Research (CSIR) in 1956.
- It is located in Kolkata (West Bengal).
- CSIR-IICB is engaged in research on diseases of national importance and biological problems of global interest and also helps to maintain momentum in life science research.
- It conducts research in a variety of areas including chemistry, biochemistry, cell biology, molecular biology, neurobiology and immunology which promotes productive interdisciplinary interaction.

## National Institutes of Pharmaceutical Education

- National Institutes of Pharmaceutical Education and Research (NIPERs) are the institutes of national importance under the aegis of the Department of Pharmaceutical, Ministry of Chemicals and Fertilizers.
- The seven institutes are functional at Ahmedabad (Gujarat), Hyderabad (Telangana), Hajipur (Bihar), Kolkata (West Bengal), Guwahati (Assam), Mohali (Punjab), and Raebareli (Uttar Pradesh).
- Recently National Institutes of Pharmaceutical Education and Research (NIPERs), have submitted a large number of multi-faceted research proposals towards the containment, identification and treatment of Covid-19 to relevant agencies for approval.

**Source:** PIB, Indian Express, Hindustan Times



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