

DAILY CURRENT AFFAIRS (DCA)

Time: 45 Min

Date: 09-04-2024

Table of Content

Mangal Pandey

Earth's Polar Vortex

Gulf Cooperation Council's Vision for Regional Security

Household Consumption Expenditure Survey (HCES) 2022-23

Regulating Artificial Intelligence (AI)

Female Labour Force Participation Rate (LFPR)

Honeycomb Clouds and Clean Air of Southern Ocean the Earth

Humans Lost Their Tails 25 Million Years Ago

News in Short

Pelagia noctiluca

Link between High Glycaemic Index and Diabetes

Anti-dumping Duty on Sodium Cyanide

Forever Chemicals(PFAS)

Criollo Cattle

Cicadas

Right Against Climate Change a Fundamental Right

MANGAL PANDEY

Context

- Mangal Pandey, was hanged to death by the East India Company on April 8.

About

- Mangal Pandey belonged to the kingdom of Awadh, which supplied large numbers of soldiers of war to the Company's army.
- He joined the East India Company's army at the age of 22 as a soldier in the 6th company of the 34th Bengal Native Infantry.

Annexation of Awadh

- In **1856** Awadh was treacherously annexed by the British.
 - The deposition of the Nawab and the confiscation of the villages of taluqdars during the land revenue settlement of 1856 caused outrage.

The mutiny and hanging of Mangal Pandey

- Mangal Pandey refused to use the newly introduced Enfield rifle, due to use of animal fat (beef and pork) in the cartridges.
- This was viewed by the soldiers as a direct assault on their religious beliefs.
- On March 29, 1857, he mutinied and fired at his Senior Sergeant Major.
- He was overpowered and hanged by the order of a Court Martial at Lal Bagan in Barrackpore.

The spread of the 1857 revolt and march to Delhi

- Pandey's action was followed by defiance by the soldiers of the **7th Awadh Regiment**.
- On May 11, 1857, a band of Sepoys from Meerut refused to use the new cartridges, killed their European officers and marched to the Red fort.

Legacy of the revolt of 1857

- Pandey's action changed the nature of British rule in India.
- The British parliament passed an Act in **1858**, transferring all powers of the Company to the Crown. Queen Victoria was declared the Sovereign of British India.
- The Queen's Proclamation made by **Lord Canning in 1858**, to the Princes, Chiefs and people of India, unveiled a new policy of **perpetual support** for the native Princes, and non-intervention in matters of religious beliefs in India.
- The Queen's Proclamation was reinforced in **1877**. The event came to be known as the **Delhi Durbar**. Queen Victoria assumed the title of **Qaiser-e-Hind**.

Source: IE

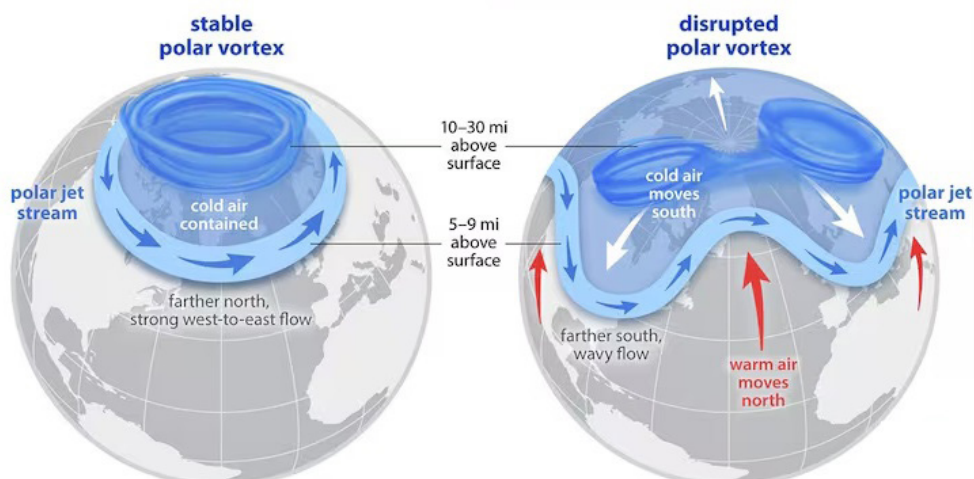
EARTH'S POLAR VORTEX

Context:

- Recently, the atmospheric scientists have noticed the development of the polar vortex and characterised it as one of the biggest events in the last four decades.

About the Earth's Polar Vortex:

- It is a large **area of low pressure and cold air** that surrounds both of the Earth's poles.
- It exists **near the poles** throughout the year, but it **weakens in summer and strengthens in winter**.
 - It is located in the polar stratosphere, above the layer of the atmosphere (the troposphere) where most weather, including the jet stream, occurs.
- The **Stratospheric Polar Vortex** forms in the winter hemisphere when the Earth's pole is pointed away from the sun.
- The term 'vortex' refers to the **counterclockwise flow of air** that helps keep the colder air near the Poles.



Impact on Weather Patterns

- It significantly influences winter weather.
- When the Polar Vortex is especially strong, the polar jet stream tends to stay farther north and exhibits a more zonal flow, with less meandering.
- At the surface, it is often associated with an even colder than usual Arctic, and milder-than-usual weather in the mid-latitudes.
- Conversely, when the Polar Vortex weakens, shifts, or splits, the polar jet stream often becomes extremely wavy, allowing warm air to flood into the Arctic and polar air to sink down into the mid-latitudes.
- It can result in extreme cold snaps, snowstorms, and other winter weather events in areas like North America, Europe, and Asia.

Source: India Today

GULF COOPERATION COUNCIL'S VISION FOR REGIONAL SECURITY

Context

- Recently, for the first time since its inception, the **Gulf Cooperation Council (GCC)** announced its **'Vision for Regional Security' in Riyadh**.

About GCC

- It is a **political and economic alliance** of **six Middle Eastern countries**—Saudi Arabia, Kuwait, the United Arab Emirates, Qatar, Bahrain, and Oman.
- It was established in **1981**.
- It aims to achieve unity among its members based on their common objectives and their similar political and cultural identities, which are rooted in Arab and Islamic cultures.
- Presidency of the council rotates **annually**.



Vision for Regional Security of GCC

- **Security of the Region:** It is based on the principles of shared destiny and indivisible security of the member states, and any threat to one is a threat to all the member States.
 - ♦ It aims to preserve regional security and stability, tackle the challenges facing them and settle the disputes through peaceful means.
- **Counter Terrorism:** It urges the member states to combat terrorism and extremism, stopping the flow of money to the hands of the terrorists and combat money laundering.
- **Maritime Security:** It calls for regional and international coordination to ensure maritime security and ensure trade and energy supply routes.
 - ♦ As all the GCC countries are key suppliers of energy, any disruption in the sea lines of communication will directly affect their national economies.
- **Peaceful use of Nuclear Energy:** As the threat of a nuclear arms race in the region looms large with Iran and Israel having nuclear programmes, the GCC has urged to make the region a Weapons of Mass Destruction Free Zone (WMDFZ).
- **Comment on Israel-Hamas War:** The document has come at a time when the West Asian region is engulfed in a turmoil since the beginning of the Israel-Hamas War in 2023.
 - ♦ The vision document makes explicit reference to the Israel-Palestine issue and calls for activating the Arab Peace Initiative.

India's Relations with GCC

- **Strategic Partnership:** GCC is a major trade and investment partner for India. While India has close economic and political ties with all countries, the strategic partnership exists with only Saudi Arabia, UAE, and Oman.
- **Energy Security:** GCC contributes to **35% of India's oil imports** and **70% of gas imports**. India is executing the **second phase of its Strategic Petroleum Reserve (SPR)**. Several GCC countries have expressed their interest in the same.
- **Trade and Investment:** GCC countries contribute to about **one-sixth of India's total trade**. However, trade and Foreign Direct Investment from GCC is dominated by UAE and Saudi Arabia.
 - ♦ India also has a significant trade deficit with the GCC which is driven by India's dependence on GCC countries for oil and gas imports.
 - ♦ Free trade negotiations between the two parties have also been delayed.

- **Defence Relations:** India's defense engagements with these countries are gaining significant momentum.
 - ♦ From mere training of security personnel in various military institutes, they have extended ties to other areas, including intelligence sharing, counterterrorism, artificial intelligence, electronic warfare, and cybersecurity.

Way Ahead

- Realpolitik and strategic interests have been instrumental in bringing India closer to the Gulf countries, with both sides willing to overlook some of their ideological differences lately.
- In the long run, defense industrial cooperation and technology transfers will likely come to form a pivotal component of their strategic cooperation.
- The possibility for such an outcome remains high as Gulf states, like India, are also embarking on rapid military industrialization programs and in search of alternative arms vendors.
- The convergences of interests – political, economic, technological and military-security – therefore, could pave the way for the furtherance of India's military diplomacy with the Gulf states.

Source: IDSA

HOUSEHOLD CONSUMPTION EXPENDITURE SURVEY (HCES) 2022-23

Context

- **The National Sample Survey (NSS)** Office released the **key results** of the **Household Consumption Expenditure Survey (HCES) 2022-23**.

About

- **The National Sample Survey Office (NSSO) under Ministry of Statistics and Programme Implementation** has been conducting household surveys on **consumption/consumer expenditure** at regular intervals as part of its rounds, normally of **one-year duration**.
- **Since 1972**, NSSO has been conducting the Consumer Expenditure Survey.
- It is designed to collect **information on consumption of goods and services** by the households.
- The survey aims at generating estimates of household **Monthly Per Capita Consumption Expenditure (MPCE)** and its distribution separately for the rural and urban sectors of the country, for States and Union Territories, and for different socio-economic groups.

Methodology Used

- In the present survey, three **3 questionnaires** were used, covering:
 - ♦ Food items;
 - ♦ Consumables and services items, and;
 - ♦ Durable goods used.
- The survey had a separate **provision for collection of information** on the quantity of consumption of the number of items received and consumed by the households **free of cost through various social welfare programmes**.

Changes in the Methodology

- First, there is **change in item coverage** with inclusion of new items and merging some of the obsolete items. Overall, the **number of items covered has increased from 347 to 405 items**.
- Secondly, there have been changes in the **questionnaire of the survey**.
 - ♦ Instead of a single questionnaire as used in earlier surveys, HCES 2022-23 uses **four separate questionnaires** for food, consumables and services items, and durable goods, apart from a separate questionnaire for canvassing household characteristics to be used in three separate monthly visits in a quarter.
 - ♦ Thus, there have been **multiple visits for data collection** instead of the usual practice of a single visit in the earlier surveys.

Major Findings

- **Rise in Income:** The income levels of both the Urban and Rural households have risen since the last survey, with Rural households showing a sharper growth in spending.
- **Rise in MPCE:** The average Monthly per capita consumption expenditure of both Urban and Rural households has doubled in the 11-year period with both spending less on food items.
 - ♦ Of the total expenditure, 46% was spent on food items in Rural households and 39% in Urban homes in 2022-23.

Food spending

Share of cereals and food in average monthly per capita consumption expenditure decreased in both rural and urban areas



Period	RURAL		URBAN	
	% share of cereals	% share of food	% share of cereals	% share of food
1999-00	22.23	59.4	12.39	48.06
2004-05	17.45	53.11	9.63	40.51
2009-10	13.77	56.98	8.16	44.39
2011-12	10.75	52.9	6.66	42.62
2022-23	4.91	46.38	3.64	39.17

- **Spending increased in Rural Households:** Household spending increased 2.6 times in Rural areas and 2.5 times in Urban areas since the last survey in 2011-12.
 - ♦ The gap between Urban and Rural household consumption has narrowed, and Indian households have been spending more on non-food items.
- **Gap Between Rich and Poor:** The top 5% of India's Rural population has 7 times the MPCE of the bottom 5 % rural population.
 - ♦ The top 5 % of India's urban population has 10 times the MPCE of the bottom 5 % Urban population.
- **Among the States,** the MPCE is the highest in Sikkim for both rural (₹7,731) and urban areas (₹12,105).
 - ♦ It is the lowest in Chhattisgarh, where it was ₹2,466 for rural households and ₹4,483 for urban household members.
- ♦ It includes violation of an individual's privacy and data rights, discrimination in access to services, or being subject to false or misleading news and information.
- **Ethical Concerns:** Unethical and improper use of AI systems could impede the achievement of the **Sustainable Development Goals (SDGs) - 2030**, weakening ongoing efforts across social, environmental, and economic dimensions.
- **Workforce Impact:** AI has the potential to disrupt the labour market, especially in developing and least developed countries, making their labour market increasingly vulnerable to the use of such systems.
- **Risk Management:** Different applications of AI can pose vastly different types of risk, at different levels of severity and on different timescales, depending on the technology and context of deployment.
- **Trust and Transparency:** AI affects the way we perceive reality, which can generate issues of trust. If we cannot tell the difference between something written by a machine or a human, we will be in a very confusing world.

It can be inferred from the data presented in the survey that:

- The difference between Rural and Urban MPCE has **narrowed substantially** over the years, implying the success of government policies in improving Rural incomes.
- While the difference is more pronounced at the lower levels, the gap is bigger at the top, reflecting an **increase in inequality at higher income levels.**
- The poorest Rural households have been able to spend at a much closer level to their Urban Counterparts, implying that government's policy initiatives for enhancing Rural incomes have worked to an extent.

Source: TH

REGULATING ARTIFICIAL INTELLIGENCE (AI)

Context

- The Artificial Intelligence (AI) space has seen certain developments crucial to its regulation in recent years.

About

- Artificial Intelligence (AI) is a transformative technology with the potential to fundamentally change the way we work and live.
 - ♦ However, it also poses significant risks that necessitate regulation.

Why does AI need to be regulated?

- **Potential for Harm:** AI systems can cause harm if not properly managed.

Different Approaches to AI Regulation

- **United Nations Resolution on AI:** The United Nations has acknowledged the risks associated with AI systems and the urgent need to promote responsible use.
 - ♦ It recognizes that unethical and improper use of AI systems could impede the achievement of the SDGs.
 - ♦ It highlights the potential adverse impact of AI on the workforce, particularly in developing and least developed countries.
- **European Union's AI Act:** It establishes rules and regulations governing AI systems.
 - ♦ It adopts a risk-based approach, categorising systems into **four categories: unacceptable, high, limited, and minimal risks.**
 - ♦ It prescribes guidelines for each category and bans applications that risk citizens' rights.
- **AI Regulation in the UK and China:** The UK and China have introduced laws on AI. While the specifics of these regulations vary, they reflect a shared recognition of the need for oversight and control of AI technologies.

Key Effort Made by India in AI Regulation:

- Digital Personal Data Protection Act in 2023
- Global Partnership on Artificial Intelligence (GPAI)
- The National Strategy for Artificial Intelligence (AIForAll Strategy) by NITI-Aayog.
- Principles for Responsible AI

- **AI Mission in India:** India has launched the AI mission, reflecting its commitment to harnessing the potential of AI while mitigating its risks.
 - ♦ As one of the largest consumer bases and labour forces for technology companies, India's response to AI regulation will be crucial.
- In 2023, for male LFPR was **78.5%**; and for women LFPR was **37%**.
 - ♦ The world women LFPR rate is **49%**, according to the World Bank figures.
- The female LFPR had been steadily declining since 2000 and touched 24.5% in 2019, before inching up, particularly in rural areas.

Challenges of Regulating AI

- **Rapid Evolution of AI:** The field is constantly evolving, making it difficult to write future-proof regulations.
- **Balancing Innovation and Safety:** Striking a balance between fostering innovation and ensuring safety is a challenge.
- **International Cooperation:** Effective AI regulation requires international cooperation to avoid a fragmented landscape.
- **Defining AI:** There's no universally agreed-upon definition of AI, making it difficult to regulate effectively.

Conclusion and Way Forward

- Regulating AI is a complex task that requires a nuanced understanding of the technology and its implications.
- Regulation is needed to ensure that AI is used for the good of our societies and their sustainable development. It should regulate AI developments and applications so that they conform to the fundamental rights that frame our democratic horizon.
- Governments across the world are grappling with the regulation of AI.
 - ♦ The UN, EU, UK, China, and India have all made strides in this direction.
- These efforts to formalise AI regulations at the global level will be critical to various sectors of governance in all other countries.

Source: TH

FEMALE LABOUR FORCE PARTICIPATION RATE (LFPR)

Context

- The India Employment Report, 2024, released by the Institute for Human Development and the International Labour Organization, points out that key labor market indicators have improved in recent years.

Key Findings

- In India the female Labour Force Participation Rate (LFPR) is very low compared to the male counterparts.

Status of women employed:

- ♦ The Report shows that it is women who largely account for the increase in self-employment and unpaid family work.
- ♦ The share of regular work, which steadily increased after 2000, started declining after 2018.

Reason for poor women labor force participation

- **Cultural and Social Norms:** In traditional societies, gender roles may discourage women from entering or staying in the workforce. Expectations around women's responsibilities for caregiving and homemaking limit their ability to pursue full-time employment.
- **Educational Attainment:** Limited access to quality education can be a barrier for women to acquire the necessary skills and qualifications for certain jobs.
- **Unequal Pay:** Difference between wage gap, discourage women from entering or staying in the workforce.
- **Structural rigidities** in India's manufacturing and service sectors have restricted employment opportunities in the informal sector, where a substantial amount of female workforce is involved.
- **Security Issues:** Sexual harassment at Workplace often hinders women participation in labor force.
- **Steps taken by Government**
- **Code on Wages, 2019:** It provides that there shall be no discrimination in an establishment among employees on the ground of gender in matters relating to wages by the same employer, in respect of the same work or work of similar nature done by any employee.
- **Maternity Benefit Act, 2017:** It was enacted to provide improved maternity benefits and promote a healthier work environment for pregnant and nursing women.
- **The Code on Occupational Safety, Health And Working Conditions (OSH), 2020:** It has proposed tweaks in employment terms and conditions for women workers in the above-ground mines.
- **Rashtriya Mahila Kosh (RMK):** It is a national-level organization that provides microfinance

services to poor women for various livelihood activities. It supports income-generating projects and promotes women's economic empowerment.

- **National Rural Livelihoods Mission (NRLM):** NRLM focuses on creating sustainable self-employment opportunities for rural women. It provides skill training, capacity building, and financial support for women to engage in income-generating activities.
- **MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act):** It guarantees 100 days of wage employment in a financial year to rural households. Women's participation in this program is encouraged, and efforts are made to ensure equitable employment opportunities.

Way Ahead

- The increase in labor force participation has come mostly in rural areas and mostly in self-employment, which means largely unpaid work.
- Interventions are needed on both the demand and supply side of the labor market to improve the condition.
 - ♦ On the demand side, policies that promote labor intensive sectors (in both manufacturing and relatively higher productivity services) are needed.
- Public investment in safety and transport is also critical along with public investment in affordable child and elderly care.
- All of these types of support can enable women to work outside the home and take advantage of relatively better paying opportunities.

Source: TH

HONEYCOMB CLOUDS AND CLEAN AIR OF SOUTHERN OCEAN THE EARTH

Context

- Recently, scientists have found the honeycomb-shaped clouds are the reason for having the cleanest air on Earth.

About the Honeycomb Clouds

- These are 'open-cell clouds'.
- These are low, flat clouds resembling a quilt when viewed from an aeroplane, with patches of open air framed by walls of clouds.
- Honeycomb cloud networks are a regular occurrence under certain conditions in the **mid-latitudes**. They can form **as part of a low-pressure system or cyclone**.

Formation:



- It is attributed to a simple form of **convection**, which is the movement of air caused by warm air rising and cold air falling.
- It is the same phenomenon that occurs in a pot of boiling water.
 - ♦ When the bottom plate (or in this case, the Earth's surface) is heated up, the warm air near it rises, pushing down the cold air from above.
 - ♦ These upward and downward movements, known as updrafts and downdrafts, start to form vertical 'walls' in the atmosphere.
- In a **uniform heating scenario**, these updrafts and downdrafts create **hexagonal cells on the surface that resemble a honeycomb**.
- However, the Earth's oceans are not heated uniformly, resulting in open-cell clouds that don't look perfectly hexagonal.

Role of Aerosols

- The atmosphere is a complex place where **factors other than heating** come into play to determine when and where clouds form.
- For instance, **aerosols**, which are **tiny particles of dust and dirt** floating in the air, **serve as surfaces for water to collect on, forming cloud droplets**.
- The number and size of aerosols can change the size of cloud droplets and determine whether clouds will produce rain.

Southern Ocean's Clean Air

- The Southern Ocean's air is considered clean due to its low levels of aerosols, fine solid particles or liquid droplets suspended in the air.
- While the lack of human activity in the region contributes to this, natural sources of fine particles, such as salt from sea spray or dust whipped up by the wind, also play a part.

The Role of Honeycomb Clouds

- Recent research has discovered that clouds and rain, particularly from open honeycomb clouds, play a crucial **role in scrubbing the atmosphere clean**.

- ◆ The Southern Ocean is the cloudiest place on Earth and experiences short-lived, sporadic showers like nowhere else.
- These honeycomb-like clouds, known as **Mesoscale Cellular Convection (MCC)** clouds, have a major role in regulating the climate.
- When a honeycomb cell is **filled with clouds or 'closed'**, it appears **whiter and brighter, reflecting more sunlight back to space** and helping keep the Earth cool.
- **Empty or 'open' honeycomb cells**, on the other hand, **let more sunlight in**.

Rainfall: The Key to Clean Air

- The research showed that days with the cleanest air were associated with the presence of open honeycomb clouds.
- These clouds generate sporadic but intense rain showers, which seem to 'wash' the aerosol particles out of the air.

Other Reasons Behind Cleanest Air on Earth:

- **Remote Location:** The Southern Ocean's remote location minimises human-induced air pollution.
- **Cold Temperatures and Strong Winds:** These conditions promote efficient dispersion of air pollutants.
- **Lack of Large Surrounding Landmass:** This limits the input of continental aerosols.
- **Phytoplankton:** Seasonal variation in the growth of tiny plant-like organisms called phytoplankton, which are a source of airborne sulphate particles, also influences aerosol levels.

What are Clouds?

- A cloud is defined as a visible suspension of small particles in the atmosphere.
- These particles can be liquid water, ice, or both, and the smallest of these, the **cloud condensation nuclei (CCN)**, can have rather little water vapour and are made up of substances to which water can attach.

Types:

- Clouds are categorised primarily by **two major factors – location and shape**.
- **High Clouds** form several kilometres up in the sky.
 - ◆ The highest clouds in the atmosphere are **cirrus, cirrostratus, and cirrocumulus**.
 - ◆ **Cirrus clouds** are thin and wispy and often curve with the wind.

- **Low Clouds** generally form within 1 or 2 km from the Earth's surface. In fact, low clouds can even form touching the ground - called fog.
 - ◆ The lowest clouds in the atmosphere are **stratus, cumulus, and stratocumulus**.
 - ◆ **Cumulus clouds** tend to be big and fluffy, looking like giant cotton balls or other shapes in the sky.
 - ◆ **Stratus clouds** form sheets of clouds that cover the sky.
- **Middle-level Clouds** form between low and high clouds.
 - ◆ These include **altocumulus and altostratus**.
 - ◆ It can form parallel streaks of clouds.

Clouds with Vertical Development:

- It includes cumulus and cumulonimbus. If a cold cloud consists entirely of ice, it is said to be glaciated.
- If a cold cloud contains both ice particles and supercooled droplets, it is a mixed cloud.

Source: TH

HUMANS LOST THEIR TAILS 25 MILLION YEARS AGO

In News

- The secret behind the disappearance of the tail was discovered by researchers from New York University Langone Health.

Do you know ?

- All mammals have a tail at some point during their development, but apes – including **humans, chimpanzees, bonobos, gorillas, orangutans, and gibbons** – lose them in utero, leaving behind three to five vestigial vertebrae called the **coccyx, or the tailbone**.
- Apes started to lose their tails in this way around 25 million years ago when the ape and monkey lineages split from a common ancestor.

Reasons behind disappearance of the tail

- **Role of AluY :** It is unique to primates (both apes and monkeys). It is tiny, being made up of around **300 base-pairs (the human genome is approximately 3 billion base-pairs)**.
- ◆ It was randomly inserted between two pieces of a **gene called TBXT inside non-tailed apes** and early humans during prehistoric times.

- ◆ The insertion has happened in the **zygote**, it was **imprinted in the DNA of every cell of that creature**, and its subsequent offspring
- ◆ As a result of this insertion, apes can't stitch the pieces together correctly and ultimately produce a **TBXT protein with one part missing**.
 - AluY snippets are also known as **"jumping genes"** or **"mobile elements"** since they are able to move around and insert themselves repeatedly and in random order in human code.
- **TBXT gene:** The TBXT gene provides instructions for making a protein called brachyury. Brachyury is a member of a protein family called T-box proteins, which play critical roles **during embryonic development**.
 - ◆ T-box proteins regulate the activity of other genes by attaching (binding) to specific regions of DNA.
 - ◆ TBXT is present in the tail length in certain animals.
 - ◆ The TBXT gene was not found in humans, not due to mutation but because of another genetic code **"snippet" known as AluY**.
 - ◆ **The TBXT gene** prevented apes from producing a protein required to form a tail.

Issues highlighted

- The defective TBXT protein caused problems, including neural tube defects.
- They predict that there must have been compensatory changes to the genome to overcome these defects.
- Some of them could be the differences they themselves identified in the proteins involved in tail formation.

Future Outlook

- It is difficult to speculate on exactly what evolutionary benefit was conferred on the ancestral tailless ape that led to its selection by nature.
- Researchers needed to conduct more experiments to be absolutely sure the Alu insertion was Reasons behind disappearance of the tail
- This one had to demonstrate that a defective TBXT protein led to tail loss.

Source:TH

NEWS IN SHORT

PELAGIA NOCTILUCA

In News

- A bloom of venomous jellyfish(Pelagia Noctiluca) was reported by marine researchers across the Visakhapatnam coast .

About Pelagia Noctiluca

- It is also known as the mauve stinger or purple-striped jellyfish.
- Unlike other jellyfish species, it has stingers not just on the tentacles, but on the bell too.
 - ◆ These are **bioluminescent**, having an ability to produce light in the dark.
- **Distribution:** The Pelagia noctiluca is found worldwide in tropical and warm-temperature seas.
 - ◆ In January 2024, the Pelagia noctiluca bloom was spotted in Thailand
 - In the past, a bloom of Pelagia noctiluca had damaged penned salmon in Ireland.
 - ◆ **It is rarely seen in the East coast of India** but scores of the venomous jellyfish species were spotted across **RK Beach and other parts of the coast**.
- **Related concerns :** It is **venomous** and causes **varying degrees of illness** such as diarrhoea, extreme pain, vomiting and anaphylactic shock (a severe allergic reaction that can develop quickly and be life-threatening).
 - ◆ Venomous jellyfish blooms have in the past been known to have caused massive **damage to the fishing industry and impacted tourism**.
- **Suggestions :** An advisory should be issued for people to not step into the waters until information of the species disappearing from the coast is given,

Do you know ?

- A jellyfish bloom is when the population of the species increases dramatically within a short period of time, usually due to a higher reproduction rate.
- According to marine biologists, jellyfish blooms are reported frequently as a result of rising ocean temperatures, one of the main causes of substantial population growth.

Source:TH

LINK BETWEEN HIGH GLYCAEMIC INDEX AND DIABETES

Context

- A Lancet paper has provided proof for the **undeniable link between high glycaemic index and diabetes.**

About

- **Findings:** The findings suggest that **consuming low glycaemic index** and low glycaemic load diets might **prevent the development of type 2 diabetes.**
 - ♦ They also found a strong association between **glycaemic index (GI) and the risk of type 2 diabetes** among individuals with a higher Body Mass Index (BMI).
- **The glycaemic index (GI)** is a rating system for **foods containing carbohydrates.**
 - ♦ It shows how quickly each food affects blood sugar (glucose) level when that food is eaten on its own.
- **High GI foods:** Carbohydrate foods that are broken down quickly by body and cause a rapid increase in blood glucose have a high GI rating.
- **Low and medium GI foods:** Low or medium GI foods are broken down more slowly and cause a gradual rise in blood sugar levels over time.

Source: TH

ANTI-DUMPING DUTY ON SODIUM CYANIDE

Context

- The Directorate General of Trade Remedies (DGTR) has recommended **imposition of anti-dumping duty on sodium cyanide (NaCN)** imported from **China, the European Union, Japan and Korea.**

About

- An **anti-dumping duty** is a **protectionist tariff** that a domestic government imposes on foreign imports that **it believes are priced below fair market value.**
- **Dumping** is a process wherein a company exports a product at a price that is significantly lower than the price it normally charges in its home (or its domestic) market.
- The revised definitive anti-dumping duties on the import of sodium cyanide is **for a period of five years.**

- **Sodium cyanide** is used in the **extraction of gold and silver** from their respective ores, in electroplating and the heat treatment of metals, and in manufacturing insecticides, dyes, pigments, and bulk drugs, etc.

Source: TH

FOREVER CHEMICALS(PFAS)

In News

- IIT Madras study revealed presence of 'forever chemicals' (Pre- and polyfluoroalkyl substances in Chennai lakes

About PFAS

- **Per- and polyfluoroalkyl substances (PFAS)** are a large, complex group of synthetic chemicals that have been used in consumer products around the world since about the **1950s.**
- They are ingredients in various everyday products such as non-stick cookware, upholstery, food packaging, water or stain resistant coatings, and industrial materials.
- They are resistant to water, grease, and heat.
- They do not break down or degrade in the environment.
- **Impact and Concerns :** They can move through soils and contaminate drinking water sources.
 - ♦ build up (bioaccumulate) in fish and wildlife.
 - ♦ They may affect reproduction, thyroid function, the immune system, and injure the liver
- **Solution :** PFAS can be broken down into mostly harmless components using sodium hydroxide, or lye, an inexpensive compound used in soap.
 - ♦ The most common method of destroying PFAS is incineration,
 - Most PFAS will break down completely at incineration temperatures around 1,500 degrees Celsius (2,730 degrees Fahrenheit), but its energy intensive and suitable incinerators are scarce.

Source:TOI

CRIOLLO CATTLE

Context

- Irish scientists have found that Criollo cattle are best suited to surviving and thriving in a warming world.

About

- Criollo is a group of cattle breeds descended from Iberian stock imported to the Americas.

- Criollo has a short, slick-hair coat that provides improved thermotolerance. This allows the animal to better withstand hot and humid weather.

Source: DTE

CICADAS

Context

- A trillion cicadas from two different broods are expected to begin appearing in the Midwest and Southeast regions of the United States at the end of April.

About

- It's the first time since 1803 that Brood XIX, or the Great Southern Brood, and Brood XIII, or the Northern Illinois Brood, will appear together in an event known as a dual emergence.

Cicadas

- Cicadas are **insects** and members of the superfamily **Cicadoidea**.
- Cicadas have prominent eyes set wide apart, short antennae, and membranous front wings.
- Cicadas are found in tropical and temperate areas worldwide and occur in deserts, grasslands, and forests.
- They have an **exceptionally loud song**, produced in most species by the rapid buckling and unbuckling of drum-like tymbals.



Source: IE

RIGHT AGAINST CLIMATE CHANGE A FUNDAMENTAL RIGHT

Context:

- Recently, the Supreme Court of India observed that the right against climate change is a distinct fundamental and human right.

Background:

- The Supreme Court's Judgement came in a case connected with the survival of the endangered Great Indian Bustard species.
- The court constituted an expert committee to examine the problem faced by the bird species whose natural habitat and flight routes collide with power transmission lines in Gujarat and Rajasthan.

About the Supreme Court's Judgement

- The Supreme Court of India noted that the right to a healthy environment, safe from the ill-effects of climate change, was a **'fundamental human right'**.
- The court linked the right against climate change to **Articles 21 (right to life) and 14 (right to equality)**, stating that the **rights to life and equality could not be fully realised without a clean, stable environment**.
- It highlighted the **interconnection** between climate change and various human rights, including the right to health, indigenous rights, gender equality, and the right to development.
- It underscores the urgent need for India to consider setting up a climate law while staying true to its goals of climate justice, carbon space, and environmental protection.
 - ♦ **Current laws**, such as the *Environment (Protection) Act, 1986*, are not adequate to deal with climate change.

The Right to a Healthy Environment:

- The right to a healthy environment is **an integral part of fundamental rights** conferred on citizens by the Constitution of India.
 - ♦ **Article 21** guarantees the fundamental right to life, has been interpreted to include the right to live in a pollution-free environment.
- The Supreme Court has previously recognized **sustainable development as an integral part of fundamental rights**.
 - ♦ It has stated that sustainable development cannot be allowed to be hampered by environmental degradation.

Source: TH