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Institute of Civil Services

DAILY CURRENT AFFAIRS



14th February, 2024

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S.NO.	TOPIC
1.	RIGHTS OF FOREST DWELLERS
2.	HAPS: HIGH IN SKY, A NEW GENE EYE
3.	PRELIMS POINTERS

RIGHTS OF FOREST DWELLERS

SOURCE: [THE HINDU](#)

TAG: GS Paper II- *Social Justice* , GS Paper III – *Conservation efforts*.

PRACTICE QUESTIONS

Mains

Q. Discuss the impact of Forest Rights Act on local forest communities.

(150 words)

WHY IN NEWS?

- ❖ Recent notification regarding **Thanthai Periyar Sanctuary in Tamil Nadu** raises alarms among forest-dwellers.
- ❖ There are fears that the notification might lead to the denial of rights under **the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 (FRA)**.
- ❖ Accusations of violating relevant laws have been directed towards district and State administrations.

THANTHAI PERIYAR SANCTUARY:

- ❖ The **Thanthai Periyar Wildlife Sanctuary** is an integral part of the corridor linking the **Sathyamangalam Tiger Reserve (STR)** with the **Male Mahadeshwara Hills Tiger Reserve** and the **Cauvery Wildlife Sanctuary**.
- ❖ It is situated at the merging point of the **Eastern Ghats with the Western Ghats in the Nilgiris**.
- ❖ Interconnected with the **Kollegal forests of Karnataka and the Nilgiris**, it forms a highly diverse habitat recognized as one of the important tiger corridors by the National Tiger Conservation Authority.
- ❖ Apart from being home to a thriving population of **elephants and Indian Gaur**, the sanctuary also serves as the catchment area for the **Palar River**, crucial for agricultural activities.
- ❖ Moreover, it holds cultural and historical significance for local tribes, who rely on its ecosystems for their traditional way of life.
- ❖ **Restrictions on cattle-grazing:**
 - ☛ Restrictions on cattle-grazing within the sanctuary may impact traditional grazing practices, including those of Bargur cattle.
 - ☛ Tamil Nadu's unique ban on cattle grazing in forests contrasts with the FRA's recognition of grazing rights for pastoralist communities.

SCHEDULED TRIBES AND OTHER TRADITIONAL FOREST DWELLERS (RECOGNITION OF FOREST RIGHTS) ACT, 2006:

- ❖ **Purpose and Background:**
 - ☛ Aims to recognize and vest forest rights in **forest-dwelling Scheduled Tribes (STs)** and **traditional forest dwellers (OTFDs)**.
 - ☛ Addresses historical injustices and insecurity of **tenurial rights** arising from colonial and post-independence forest policies.
 - ☛ Recognizes forest rights as including habitation, cultivation, access to minor forest produce, and traditional community rights.

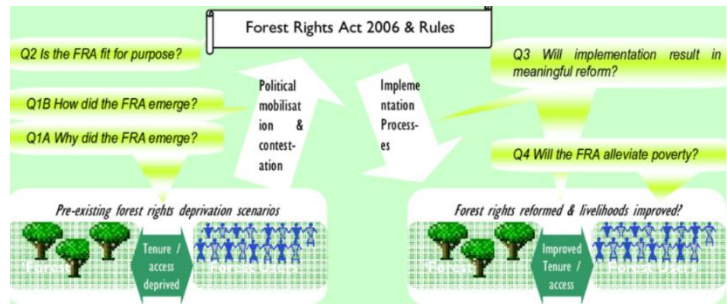


❖ **Forest Rights:**

- Includes **individual and community rights** for habitation, cultivation, access to minor forest produce, and traditional entitlements.
- Acknowledges the **authority of Gram Sabha** in initiating the process of determining forest rights.
- Specifies joint registration of rights in the name of spouses or single heads of households.

❖ **Recognition and Vesting of Forest Rights:**

- Outlines the procedure for recognition and vesting through Gram Sabha resolutions and sub-divisional/district level committees.
- **Ensures heritability of rights and prohibits eviction** until recognition process completion.
- Limits individual or family **occupation of forest land to four hectares**.
- Exempts recognized forest rights from encumbrances and procedural requirements under other laws.



❖ **Duties of Rights Holders:**

- Empowers rights holders and Gram Sabha to **protect wildlife, forests, and biodiversity**.
- Mandates preservation of habitat and cultural heritage of forest-dwelling communities.

❖ **Offences and Penalties:**

- Imposes penalties for contravention of provisions related to forest rights recognition.
- Requires prior notice to the **State Level Monitoring Committee** before legal action against any authority under the Act.
- **FRA violations, especially concerning Scheduled Tribes, are considered crimes under the Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989.**

❖ **Other Provisions:**

- Designates the **Ministry of Tribal Affairs** or authorized officers as the **nodal agency**.
- Grants the **Central Government** the power to issue directions to implementing authorities.
- Ensures that the Act supplements existing laws without derogating from them.
- Mandates **parliamentary scrutiny and approval of such rules** made by the central government under the act.

❖ Despite the **FRA's enactment in 2006**, Tamil Nadu has made limited progress in recognizing forest rights, with only a small fraction of the intended area titled to date.

❖ **Comparison with Wildlife Protection Act:**

- Sanctuaries and national parks are notified under the WLP, with people retaining their rights unless prohibited.
- The **FRA overrides conflicting provisions in the WLP**, necessitating the determination of rights and consent acquisition from gram sabhas when notifying Protected Areas.

DIFFERENCE BETWEEN REVENUE VILLAGE AND FOREST VILLAGE:

REVENUE VILLAGE	FOREST VILLAGE
✓ Small administrative unit with fixed limits	✓ Typically managed or owned by inhabitants
✓ Can include multiple hamlets	✓ Administered by local communities



✓ Governed by a Village Administrative Officer (VAO)	✓ Managed by Village Forest Committee, Forest Protection Committee, or Village Forest Institution
✓ Origin dates back to Raja Todar Mal's land reform system	✓ Originates from the Forest Act of 1878
✓ Primarily focused on revenue collection and administration	✓ Focuses on sustainable development and resource use
✓ Subject to regular government services and infrastructure	✓ Often lacks easy access to government services due to legal restrictions
✓ Presence of government institutions and services	✓ Residents often rely on community efforts for forest management
✓ Mainly concerned with land revenue and agricultural activities	✓ Emphasizes forest conservation and protection
✓ Part of mainstream administrative setup	✓ Governed under specific forest laws and regulations

- ❖ Forest villages were ordered to be converted into revenue villages by the Union Ministry of Environment and Forests (MoEF) in 1990.
- ❖ However, full implementation of this conversion, as required by the FRA enacted in 2006, has not occurred.

FOREST DWELLERS:

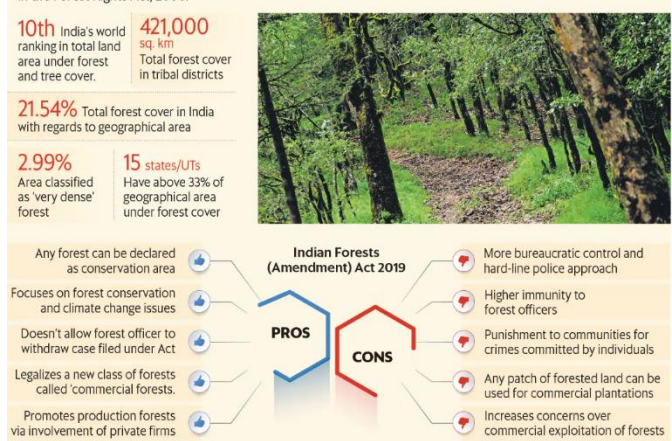
- ❖ As per the **Forest Rights Act**, beneficiaries include '**Forest Dwelling Scheduled Tribes**,' indicating Scheduled Tribe members residing primarily in forests, who rely on them for their livelihood.
- ❖ '**Other Traditional Forest Dwellers**' are those who have lived in forests for **at least three generations** before December 13th, 2005, and depend on forests for their livelihood.
- ❖ It's crucial to clarify that not every individual living in forests qualifies as a traditional forest dweller.

ISSUES FACED BY THE TRIBALS:

- ❖ Tribals grapple with small and economically unviable landholdings, leading to **chronic indebtedness**.
- ❖ Their occupations primarily revolve around **hunting, gathering, and agriculture, employing simple and primitive technologies**.
- ❖ A significant portion of the tribal population is limited to primary occupations, with minimal participation in secondary and tertiary sectors.
- ❖ **Low literacy rates** persist among tribal communities, exacerbating socio-economic challenges.
- ❖ **Industrial projects**, including steel plants, power projects, and large dams, alongside mining activities, have caused widespread displacement by acquiring tribal lands.



- ❖ Economic backwardness contributes to **health issues** such as malaria, cholera, tuberculosis, diarrhoea, and malnutrition, with high infant mortality rates and low life expectancy.
- ❖ **Environmental degradation**, particularly forest destruction, further compounds problems, disproportionately affecting tribal women.
- ❖ **Tribal identity erosion** is evident in the extinction of dialects and languages, with varying tribal concentrations across different regions.



GOVERNMENT INITIATIVES:

- ❖ Special provisions under the Indian Constitution safeguard Scheduled Tribes' interests.
- ❖ Designation of Scheduled Areas and the establishment of **Ministries of Tribal Welfare** in states with substantial tribal populations.
- ❖ **Reservation of seats in legislative bodies** and adequate representation in services for Scheduled Tribes.
- ❖ Setting up of **Tribal Advisory Councils** and appointment of a Commissioner to oversee safeguards for Scheduled Tribes.
- ❖ Focus on **educational facilities**, vocational training, and scholarships for higher studies abroad.
- ❖ Establishment of **tribal research institutes** to study arts, culture, and customs in-depth, across multiple states.

Rights for the dwellers

What the Forest Rights Act, 2006, entails

- Tenurial security over the forestland under occupation prior to December 13, 2005
- Recognition of community right over forest and forest products
- Protection and conservation of community forest resources
- Conversion of all forest villages and habitation located inside the forestland into revenue villages
- In situ rehabilitation of displaced persons evicted without compensation prior to December 13, 2005
- Recognition of ancestral domain (habitat) right to



Residents of Gunduribadi village in Odisha's Nayagarh district get ready for mapping their land boundaries for the Forest Rights Act implementation. ■ SPECIAL ARRANGEMENT

Particularly Vulnerable Tribal Groups

- Seasonal access to nomadic, pastoral and semi-nomadic communities over forestland
- Conversion of all leases granted by erstwhile governments, zamindars and king into permanent land records

CONCLUSION:

- ❖ In conclusion, the issues faced by tribals, compounded by limited recognition of forest rights and the recent notification concerning the Thanthai Periyar Sanctuary, underscore the ongoing challenges in safeguarding their livelihoods and cultural heritage. While government initiatives aim to address these concerns through constitutional provisions and welfare measures, **effective implementation and equitable distribution of benefits remain imperative to ensure the well-being and empowerment of tribal communities in India.**



HIGH-ALTITUDE PSEUDO-SATELLITE (HAPS)

SOURCE: INDIAN EXPRESS

TAG: GS Paper III- **Achievements of Indians in Science & Technology, Defence Technology, Indigenization of Technology**

Mains Practice Question:

Q. Discuss the strategic advantages of India's early engagement in High-Altitude Pseudo-Satellite (HAPS) technology development. How does early adoption contribute to capacity building, patent control, and business opportunities?

Q. Analyse India's position in HAPS technology vis-à-vis other countries, highlighting competitive advantages and challenges.

WHY IN NEWS?

- ❖ India recently conducted a successful test of a HAPS prototype. These solar-powered vehicles have various applications including surveillance, monitoring, and disaster management.
- ❖ Developed by the National Aerospace Laboratories (NAL) in Bengaluru, this innovative UAV can fly up to 20 km above the ground solely on solar power and can remain airborne for extended periods.
- ❖ HAPS, also known as high-altitude pseudo-satellite vehicles or HALE, represent a significant technological advancement in the field of unmanned aerial vehicles.

BREAKTHROUGH IN HIGH-ALTITUDE SOLAR-POWERED UAV TECHNOLOGY

Bengaluru-based National Aerospace Laboratories (NAL) achieved a significant milestone by successfully flying a prototype of a new-generation unmanned aerial vehicle (UAV).

❖ **Key Features of the UAV:**

- ☛ This UAV possesses extraordinary capabilities, being able to fly at altitudes of about 20 km above the ground.
- ☛ It operates entirely on solar power, ensuring prolonged flight durations.
- ☛ Classified as high-altitude pseudo-satellite vehicles (HAPS) or high-altitude long-endurance vehicles (HALE).

❖ **Utility and Applications:**

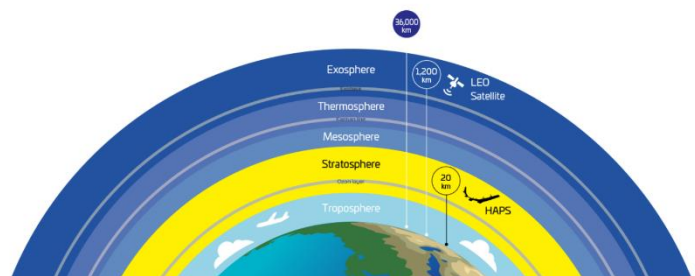
- ☛ HAPS vehicles are primarily designed for surveillance and monitoring purposes.
- ☛ They hold potential for various applications, including disaster management scenarios.

❖ **Status of HAPS Technology:**

- ☛ HAPS technology is still in the developmental stage, with various countries and companies making progress in this domain.
- ☛ Despite promising advancements, no entity has fully mastered the technology yet.
- ☛ The current world record for a HAPS vehicle flight duration is held by Zephyr, manufactured by Airbus, which flew for 64 days before crashing in August 2022.

❖ **Prototype Testing by NAL:**

- ☛ The prototype tested by NAL remained airborne for eight and a half hours.





- NAL, a Council of Scientific and Industrial Research (CSIR) unit, aims to extend flight durations, with plans to keep a vehicle in the air for at least 24 hours next month.
- The ultimate goal is to develop a full-scale machine capable of remaining airborne for 90 consecutive days by 2027.

NEED FOR HIGH-ALTITUDE PSEUDO-SATELLITE VEHICLES HAPS:

❖ Limitations of Current Surveillance Technologies:

- UAVs (drones) are primarily battery-powered and have limited airborne endurance, restricting their ability for continuous monitoring.
- Satellites in low-earth orbits are constantly moving relative to the Earth, hindering continuous observation of target areas.
- Geostationary satellites, while offering constant observation over one area, are costly and lack flexibility in repurposing or reorienting.

❖ Advantages of HAPS:

- Designed to overcome the shortcomings of existing surveillance technologies.
- HAPS, flying at approximately 20 km above the ground, provide extended loitering capabilities over target regions.
- They move slowly, at around 80-100 km per hour, enabling comprehensive coverage of large areas without objects on the ground appearing to move significantly.
- HAPS can effectively monitor up to 200 sq km of area, with the ability to observe even a 400 sq km area with high resolution (five-metre resolution).
- The flexibility of HAPS vehicles allows for easy redeployment to different locations and adaptation with diverse payloads.

❖ Expert Insight:

- Dr. L Venkatakrisnan, chief scientist and head of Experimental Aerodynamics Division at NAL, emphasizes that HAPS vehicles combine the advantages of geostationary satellites with added flexibility.
- They offer the capability for redeployment over various locations and adaptability with different payloads, enhancing their versatility and effectiveness in surveillance and monitoring tasks.

ENGINEERING CHALLENGES IN DEVELOPING (HAPS):

❖ Technological Hurdles:

- Despite years of effort, engineers have struggled to develop a fully functional HAPS vehicle due to significant technological barriers.
- Recent advancements in solar cells, batteries, and composite materials have made the prospect of creating such a vehicle more feasible.

❖ Primary Challenges:

- Generating sufficient solar power to sustain flight, operate payloads, and charge batteries presents a significant challenge.
- Batteries must possess adequate capacity to support continuous operations, even during night-time flight.

❖ Design Complexity:



- The aircraft must strike a delicate balance between lightweight construction to minimize power requirements and stability to ensure safe operation.
- Operating in the stratosphere, between 17 km and 23 km altitude, provides climatological advantages such as low wind speeds, conducive for stability and observation activities.
- However, extreme temperatures as low as -50 degrees Celsius and low air density pose additional challenges, requiring careful consideration in design and component selection.

❖ **Efficiency Requirements:**

- Solar cells and batteries must be highly efficient due to space and weight limitations.
- Engineers aim for battery cells with an energy density of 500 watt-hour/kg, surpassing conventional batteries used in trucks and even advanced technology employed by companies like Tesla.

❖ **Engineering Limitations:**

- The development of HAPS vehicles pushes the boundaries of existing technology.
- Achieving the desired energy density and addressing other technical aspects such as design, materials, aerodynamics, and aeroelasticity require cutting-edge innovation.
- HAPS represents one of the most significant engineering challenges in aviation today, demanding meticulous attention and continuous advancement in technological capabilities.

EARLY ADOPTION ADVANTAGES IN HIGH-ALTITUDE PSEUDO-SATELLITE (HAPS) TECHNOLOGY

❖ **Strategic Importance of Early Start:**

- Initiating development in HAPS technology at an early stage offers several strategic advantages for India.
- Early entry allows for capacity building, fostering expertise in a cutting-edge technology domain.
- It facilitates early adoption, granting control over patents and positioning India for business opportunities and spin-off technologies.

❖ **India's Position in HAPS Development:**

- Dr. Venkatakrishnan asserts that India has entered HAPS technology development at an opportune moment.
- Successful test flights demonstrate India's capabilities, placing it on par with other countries engaged in similar technological pursuits.
- While not yet leading, India is positioned as a frontrunner in the race, with the potential to achieve leadership status in the near future.

❖ **Competitive Advantages:**

- India enjoys certain competitive advantages in HAPS technology development.
- For instance, none of the advanced HAPS options, including Zephyr, has operated in tropical areas.
- The presence of jet streams in the upper atmosphere poses unique challenges, but India's familiarity with tropical conditions presents an opportunity to overcome these challenges effectively.

CONCLUSION:

- ❖ India's early engagement in HAPS technology reflects its commitment to technological innovation and leadership in the aerospace sector.
- ❖ Leveraging competitive advantages and building on successful test flights, India aims to emerge as a prominent player in the global HAPS arena, contributing to advancements in surveillance, monitoring, and beyond.



TOPIC	DESCRIPTION
<p>NATO FUNDING AND ITS ARTICLE 5</p>	<p>WHY IN NEWS?</p> <ul style="list-style-type: none"> ❖ <i>Trump's criticism of NATO's defence spending and commitment to collective defence challenges the alliance's unity and significance of Article 5.</i> <p>NATO OVERVIEW</p> <ul style="list-style-type: none"> ❖ Establishment: Formed in 1949 to counter Soviet Union. ❖ Membership: Started with 12 nations, now has 30. ❖ Recent Additions: North Macedonia in 2020, with Finland and Sweden expressing interest. ❖ Headquarters: Located in Brussels, Belgium, with Allied Command Operations in Mons, Belgium. <p>OBJECTIVES</p> <ul style="list-style-type: none"> ❖ Political Goals: Promote democratic values, facilitate cooperation on defence and security issues. ❖ Military Mission: Ensure member security through crisis management operations, invoking Article 5 if necessary. ❖ Article 5 Invocation: Used once after 9/11 attacks on the US in 2001. <p>NATO'S ARTICLE 5 EXPLAINED:</p> <ul style="list-style-type: none"> ❖ Collective Defence Principle: Attack on one member is attack on all. ❖ Commitment to Assist: Members pledge to aid attacked party with necessary action, including armed force. ❖ No Automatic Response: Article lacks automatic military response provision. ❖ Dependence on Political Statements: Strength depends on clear political commitments. ❖ Trump's Remarks: Raised concerns by suggesting reluctance to fulfill Article 5 commitments. ❖ NATO Secretary General's Response: Stressed importance of mutual defence for security of all members.
<p>PM MODI TO INAUGURATE BAPS TEMPLE IN UAE</p>	<p>WHY IN NEWS?</p> <ul style="list-style-type: none"> ❖ <i>Prime Minister Narendra Modi's upcoming inauguration of the BAPS Swaminarayan temple in Abu Dhabi, the first Hindu temple in the UAE, has garnered significant attention</i> <p>ABOUT BAPS TEMPLE</p> <ul style="list-style-type: none"> ❖ Special Features: <ul style="list-style-type: none"> ☞ External Facade: Pink sandstone from Rajasthan, Italian marbles for interior. ☞ Architectural Design: Traditional stone Hindu temple with seven shikhars. ☞ Size and Construction: 108 ft tall, 262 ft long, 180 ft wide, covering 27 acres. ☞ Symbolism: Emphasizes human coexistence, features Dome of Harmony and Dome of Peace.





RECENT LAW AND FARMER'S DEMANDS OVER MSP

- ☛ **Cultural Representation:** Deities from various Indian regions, representations of other civilizations.
- ❖ **Significance:**
 - ☛ **Symbol of Unity:** Reflects **unity and collaboration** among diverse religious backgrounds.
 - ☛ **Diplomatic Relations:** PM Modi's participation strengthens **bilateral ties between India and UAE.**
 - ☛ **Cultural Exchange:** Serves as a platform for **cultural dialogue between India and UAE.**

WHY IN NEWS?

- ❖ *The current news highlights farmers' demands for a legal guarantee of Minimum Support Prices (MSP) for all crops, as they march towards New Delhi.*

ABOUT MSP & FARMER'S DEMAND

Minimum Support Price (MSP):

- ❖ **Definition:**
 - ☛ **Guaranteed price paid by the government** for farmers' produce.
- ❖ **Factors:**
 - ☛ Determined by **Commission for Agricultural Costs and Prices (CACP)** considering production costs, market dynamics.
- ❖ **Establishment:**
 - ☛ CACP, under **Ministry of Agriculture** since **January 1965.**
- ❖ **Approval:**
 - ☛ Finalized by **Cabinet Committee on Economic Affairs (CCEA),** chaired by **Prime Minister.**
- ❖ **Objective:**
 - ☛ **Ensures fair compensation, stabilizes agricultural incomes,** promotes crop diversification.
- ❖ **Covered Crops:**
 - ☛ **Mandated Crops:** MSPs set for **22 crops (14 kharif, 6 rabi, 2 commercial).**
 - ☛ **Additional: Fair and Remunerative Price (FRP)** for sugarcane ensures fair compensation to growers.

FARMERS DEMAND C2+50% FORMULA

What is C2+50%?

- It's a formula to arrive at MSP at which farmers' produce could be procured by government agencies
- **C2+50%** | Comprehensive cost including imputed cost of capital and the rent on the farmers' own land

What is being currently used?

- Govt uses **A2+FL** formula to arrive at MSP
- **A2+FL** | All paid-out costs incurred by farmers and the value of family labour
- **MSP are fixed at a level of at least 1.5 times of the all paid-out costs** | All-India weighted average cost of production

(All paid-out costs: Those incurred on account of hired human labour, bullock labour/machine labour, rent paid for leased-in land, expenses incurred on use of material inputs like seeds, fertilizers, manures, irrigation charges, depreciation on implements and farm buildings, interest on working capital, diesel/electricity for operation of pump sets etc., miscellaneous expenses and imputed value of family labour)

RECENT DEMANDS OF FARMERS':

- ❖ **Guaranteed Minimum Support Price (MSP) for all crops based on the Swaminathan Commission's report.**
- ❖ **Full debt waiver** for farmers and laborers.
- ❖ Implementation of the **Land Acquisition Act of 2013** with farmer consent and fair compensation.
- ❖ **Punishment for those responsible** for the Lakhimpur Kheri killings.
- ❖ **Withdrawal from the World Trade Organization (WTO)** and **freezing of free trade agreements.**
- ❖ **Pensions for farmers** and laborers.
- ❖ **Compensation for farmers** who died during previous protests.
- ❖ **Scrapping of the Electricity Amendment Bill 2020.**
- ❖ **Increase in employment days under MGNREGA to 200 days per year** with higher wages linked to farming.
- ❖ **Strict penalties** for companies **producing fake seeds, pesticides, and fertilizers.**



- ❖ Establishment of a **national commission for spices**.
- ❖ Protection of **indigenous peoples' rights** over resources.

BACKGROUND ON MSP COMMITTEE:

- ❖ **Committee Formation:**
 - ☛ A committee was established by the Centre in **July 2022** to enhance the **effectiveness and transparency of MSP**, among other objectives.
- ❖ **Committee Composition:**
 - ☛ Chaired by former agriculture secretary Sanjay Agrawal, the **committee comprises 26 members, including representatives from NITI Aayog, farmers' organizations, agricultural economists, and government officials.**
- ❖ **Purpose of the Panel:**
 - ☛ The committee aims to **promote zero-budget farming, alter crop patterns, and improve MSP effectiveness and transparency.**

IIT MADRAS ZANZIBAR

WHY IN NEWS?

- ❖ *IIT Madras Zanzibar's inauguration has sparked widespread interest as it **signifies a landmark move in India's educational outreach abroad.***

BACKGROUND

- ❖ The IITs (Indian Institutes of Technology) were **established to contribute to India's human resource development.**
- ❖ They were conceived as institutions of **"Indianness" and national imperative.**
- ❖ Initially, they were **built with Western assistance** but maintained their Indian character.

EXPANSION BEYOND BORDERS

- ❖ IITs are now **admitting foreign students** and there's a **recommendation to set up overseas campuses.**
- ❖ The **first offshore campus, IIT Madras Zanzibar, signifies a new phase in IIT's internationalization.**

INDIAN CHARACTER ABROAD

- ❖ Despite being **located in Zanzibar**, the IIT Madras campus maintains its Indian identity.
- ❖ It's not just a mentorship program; it's a **replication of the Indian institute in a different location.**

ABOUT ZANZIBAR

- ❖ **Location:**
 - ☛ Zanzibar is an island situated in the **Indian Ocean**, located off the **coast of east-central Africa.**



STEM CELLS IN MENSTRUAL BLOOD

WHY IN NEWS?

- ❖ *Recent **discovery of endometrial and menstrual stem cells** highlights their therapeutic potential and **addresses funding biases in women's health research.***

ENDOMETRIAL STEM CELLS DISCOVERY:

- ❖ Unique cells in the **endometrium** identified during **hysterectomy surgeries.**

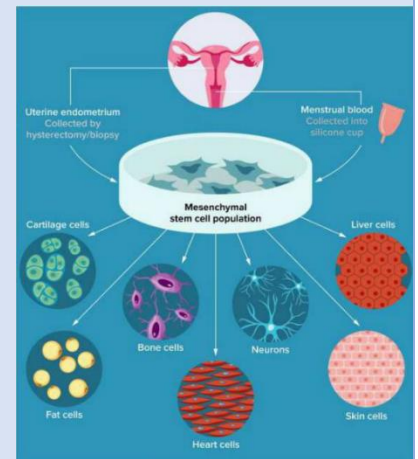


STEM CELL RESEARCH

- ❖ Suspected as **adult stem cells** due to self-renewal potential.

CHARACTERIZATION & APPLICATIONS:

- ❖ Rigorous testing showed ability to **proliferate, self-renew, and differentiate**.
- ❖ Identified as **multipotent endometrial stromal mesenchymal stem cells**.
- ❖ Potential for treating conditions like **endometriosis**.
- ❖ Surprising **non-invasive method** for stem cell collection.
- ❖ Therapeutic applications beyond gynecological diseases explored.



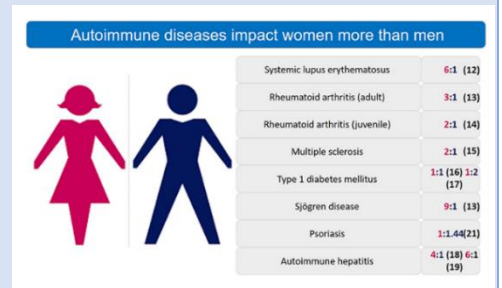
GENDER BIAS IN AUTOIMMUNE DISEASES

WHY IN NEWS?

- ❖ A **2023 University of Oxford study** unveiled a **higher prevalence of autoimmune diseases in women than in men**.

SUSCEPTIBILITY FACTORS:

- ❖ Historically, researchers linked the gender bias to sex hormones or **X chromosome regulation**.
- ❖ **Molecular Coating:** Scientists identified a **molecular coating** on half of women's X chromosomes, crucial for **X-chromosome inactivation**.
- ❖ This coating, facilitated by **XIST RNA**, suppresses gene expression but may allow some genes to escape, potentially leading to autoimmune diseases.
- ❖ Proteins attracted to XIST may trigger autoantibody production & **targeting self-antigens**.
- ❖ XIST expression in cells with **two X chromosomes** renders **women more prone to autoimmune diseases**.



PLACES IN NEWS- 'RAFAH CROSSING'

WHY IN NEWS?

- ❖ **Israel's intention to invade Rafah in Gaza** sparks international criticism. With over 1.4 million residents, **Rafah's significance lies in its role as a vital gateway for humanitarian aid**.

ABOUT RAFAH CROSSING:

- ❖ Located at the **southernmost point of the Gaza Strip**, sharing a border with **Egypt's Sinai Peninsula**.
- ❖ **Controlled by Egypt**, it is the **only exit point from Gaza** that **does not lead to Israeli territory**.

SIGNIFICANCE OF RAFAH:

- ❖ **With over 1.4 million** people currently residing in Rafah, the **city has become a major refuge amid the conflict in Gaza**.
- ❖ Its proximity to Egypt and the presence of the **border crossing makes Rafah a crucial gateway for humanitarian aid and supplies**.



THANTHAI

WHY IN NEWS?



PERIYAR SANCTUARY

- ❖ **Notification on Thanthai Periyar Sanctuary in Tamil Nadu sparks fears of rights denial, accusing district and state administrations of violations.**

THANTHAI PERIYAR WILDLIFE SANCTUARY

❖ Geographical Significance:

- ☛ Located in **Bargur Hills, Erode district**, serving as a vital corridor connecting **Nilgiris Biosphere Reserve with Cauvery South Wildlife Sanctuary.**

- ☛ Strategic position in **Eastern Ghats**, merging with Western Ghats at Nilgiris.

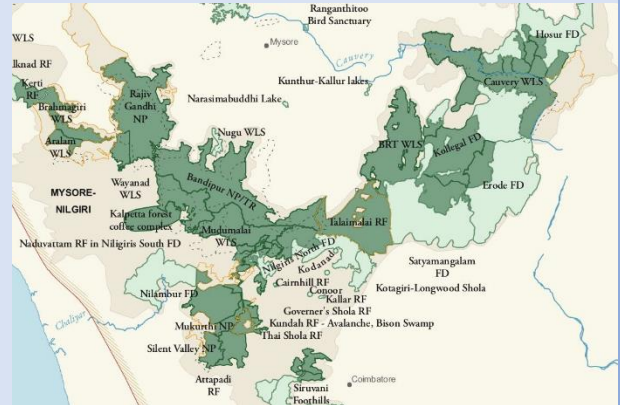
❖ Biodiversity and Habitat:

- ☛ **Diverse flora and fauna**, offering ideal habitat for various species.

- ☛ Interconnected landscape with **Kollegal forests of Karnataka and Nilgiris**, creating a rich habitat.

❖ Role in Conservation:

- ☛ Functions as a **corridor linking Sathyamangalam Tiger Reserve with Male Mahadeshwara Hills Tiger Reserve and Cauvery Wildlife Sanctuary.**
- ☛ Identified as crucial for maintaining **viable tiger population by National Tiger Conservation Authority.**
- ☛ **Part of Nilgiris Elephant Reserve**, housing healthy population of large herbivores like **elephants and Indian Gaur.**



SANCTUARY HIGHLIGHTS

- ❖ **18th wildlife sanctuary in Tamil Nadu**, facilitating movement of **elephants and tigers between Western and Eastern Ghats.**
- ❖ Incorporates diverse landscape with **hills, valleys, forests, and grasslands.**
- ❖ **Periyar River, longest in Kerala**, and **Pamba River** flow through the sanctuary.

FLORA AND FAUNA

- ❖ Flora includes **rosewood, teak, sandalwood, bamboo, medicinal plants.**
- ❖ Rich mammal diversity: **tigers, leopards, elephants, gaurs, sloth bears, deer species, and more.**
- ❖ Diverse bird species including **hornbills, peacocks, and migratory birds.**
- ❖ Various reptiles such as **snakes, lizards, crocodiles, and turtles.**

INDIGENOUS TRIBE

- ❖ **Paliyar tribe**, an **indigenous community** traditionally inhabiting the sanctuary's forests.