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**1. 2,843 km, 400+ trains: Corridors cut time and cost, offer last-mile link**

**Source:** The Indian Express

**GS Subject:** GS-3 — Infrastructure, Railways, Logistics & Economic Development

**2. Women should take back the night**

**Source:** The Hindu

**GS Subject:** GS-1 — Indian Society | GS-2 — Gender Justice & Women's

Empowerment

**3. Five baby orangutans spotted in Odisha, cops suspect smuggling**

**Source:** The Indian Express

**GS Subject:** GS-3 — Environment, Biodiversity Conservation & Wildlife Protection

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**Source:** The Hindu

**GS Subject:** GS-3 — Energy, Coal, Industrial Development & Clean Technology

**5. Have complete trust in ISRO: French space agency**

**Source:** The Hindu

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**6. Endometriosis could be genetic, reveals 1st Indian genome study**

**Source:** The Indian Express

**GS Subject:** GS-3 — Science & Technology, Health & Biotechnology

**7. Houthis strike oil facilities in 4 Saudi cities as war expands**

**Source:** Reuters

**GS Subject:** GS-2 — International Relations, West Asia, Geopolitics & Energy Security

UNVEILS SLEW OF PROJECTS WORTH OVER Rs 35,000 CRORE IN GUJARAT

# Freight corridors complete, UPA kept files pending: PM

*'Atakti, latakti, bhatakti': Modi on 'administrative inertia' before 2014*

Aditi Raja  
Vadodara, September 8

INDIA LOST several years to "administrative inertia", as files for key infrastructure projects kept moving from one office to another, Prime Minister Narendra Modi said on Tuesday as he criticised the UPA era that preceded his term.

The Prime Minister addressed a "NaMo for Viksit Bharat" gathering in Vadodara after inaugurating three key sections of the 1,500-km Western Dedicated Freight Corridor connecting Jawaharlal Nehru Port Trust (JNPT) in Navi Mumbai with Dadri near Noida in Uttar Pradesh.

The Dedicated Freight Corridor project, comprising 2,800 km of high-speed railway lines along the eastern and western corridors, was now complete, the Prime Minister said.

"This is a major milestone for Gati Shakti and India's logistics transformation", and a "historic achievement for 21st century India", he said.

The Prime Minister described the completion of the Dedicated Freight Corridor as evidence of the way in which

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PM Narendra Modi in Vadodara, Tuesday. BHUPENDRA RANA SURPRISED BY FURORE OVER GDP: MODI, P 11

## 2,843 km, 400-plus trains: Corridors cut time and cost, offer last-mile link

Dheeraj Mishra  
New Delhi, September 8

AMONG THE projects that Prime Minister Narendra Modi inaugurated in Vadodara on Tuesday were the last three sections of the Western Dedicated Freight Corridor (WDFC), together covering 326 kilometres and developed at a cost of over Rs 20,700 crore.

These three sections between Gujarat and Maharashtra — New Sanand (N)-New Makarpura, New Umbergaon-



New Saphale, New Saphale-New Jawaharlal Nehru Port Trust (JNPT) — mark the com-

pletion of the 1,506-km WDFC, which runs from JNPT in Navi Mumbai to Dadri in Uttar Pradesh. »CONTINUED ON PAGE 2

## 1. 2,843 km, 400+ Trains: Dedicated Freight Corridors Cut Time and Cost, Offer Last-Mile Link

Source: The Indian Express

GS Subject: GS-3 — Infrastructure, Railways, Logistics & Economic Development

1. **Context:** PM Narendra Modi inaugurated the remaining sections of the Western Dedicated Freight Corridor, taking India's operational DFC network to 2,843 km, aimed at boosting freight capacity, reducing logistics costs and decongesting the conventional railway network.

## 2. Two Major Dedicated Freight Corridors

- **Eastern Dedicated Freight Corridor (EDFC) — 1,337 km**
  - **Route:** Sahnewal/Ludhiana, Punjab → Sonnagar, Bihar.
  - **States:** Punjab, Haryana, Uttar Pradesh, Bihar, Jharkhand and West Bengal.
  - **Major freight:** Primarily coal and mineral traffic, along with other bulk commodities.
- **Western Dedicated Freight Corridor (WDFC) — 1,506 km**
  - **Route:** JNPT, Maharashtra → Dadri, Uttar Pradesh.
  - **States:** Uttar Pradesh, Haryana, Rajasthan, Gujarat and Maharashtra.
  - **Major freight:** Primarily containers, EXIM cargo and industrial commodities.

## 3. Why Were DFCs Needed?

- Major railway routes such as **Howrah–Delhi and Mumbai–Delhi** faced severe congestion, with capacity utilisation reaching **115–150%** on some stretches.
- Freight and passenger trains sharing the same network restricted railway capacity.
- DFCs provide **dedicated high-capacity freight infrastructure**, freeing conventional routes for passenger services.

## 4. Key Features

- **Higher speed:** Average freight-train speed on DFCs is **over 50 km/h**, significantly higher than conventional freight operations.
- **Higher carrying capacity:** Designed for **longer and heavier freight trains**.
- **Double-stack containers:** Particularly important on the WDFC, allowing greater cargo to be carried per train.
- **Electrification:** Both major corridors are electrified.
- **High utilisation:** More than **400 freight trains operate daily** on the two corridors.

## 5. Logistics & Economic Significance

- **Port connectivity:** WDFC links major western ports such as **JNPT, Mumbai, Pipavav, Mundra and Kandla** with northern industrial and logistics centres.

- **Lower logistics costs:** Faster freight movement reduces **transit time and transportation costs**.
- **Supply-chain efficiency:** Facilitates faster movement of **raw materials and finished goods** between production centres, markets and ports.
- **Industrial competitiveness:** Better freight connectivity supports **manufacturing, exports and logistics-sector development**.
- **Railway decongestion:** Shifting freight to DFCs releases capacity on existing railway lines for passenger and other services.

## 6. Institutional & Financial Framework

- **Dedicated Freight Corridor Corporation of India Limited (DFCCIL):**
  - Responsible for the **construction, operation and maintenance** of the DFC network.
- The project has received financial support from the **World Bank, Japan International Cooperation Agency (JICA) and the Government of India**.

## 7. Future Expansion

- A **third DFC from Dankuni, West Bengal to Surat, Gujarat** has been proposed.
- Its **Detailed Project Report (DPR)** is under preparation.
- The proposed corridor would further strengthen connectivity between **eastern production centres, central India and western industrial and port regions**.

# Women should take back the night

**T**he Leader of the Opposition, Rahul Gandhi, recently caught patriarchy by the horns at Pune's 'Chhatron Ki Goonj' women-only conclave.

He confronted the vulnerability of women in public spaces by explicitly framing women's autonomy as ownership not only of their bodies but of their lives. Instead of considering women merely as a constituency to be protected, Rahul Gandhi questioned the very "cage" in which women are confined on the pretext of safety. This intervention echoes a seminal argument on women's mobility by Rebecca Solnit in her book *Wanderlust: A History of Walking*, where she explores how the freedom to walk alone at night and to discover the world on one's own terms has historically been a male prerogative – a right denied to women.

Feminist theorist Catharine MacKinnon argued that male dominance exercises its force as consent and its control as the definition of legitimacy. Patriarchal control operates through practices presented as protection and cultural legitimacy. When Indian women contest these restrictions, cultural narratives and religious scriptures are weaponised to preserve the status quo. This systemic oppression is then presented as "Indian culture." However, in *Culture and Society*, Raymond Williams reminds us that culture is never a singular, homogenised, fixed, or unalterable monolith. Rather, it is a dynamic reaction to the changing "conditions of our common life." Williams



**Ragini Nayak**

National  
Spokesperson, INC  
and former President,  
DUSU

Historically, the night has belonged to men. Girls, from a very tender age, are made to fear the night; of venturing out alone in darkness

argues that while the idea of culture describes our common inquiry, "our conclusions are as diverse as our starting points." The understanding of culture as an unalterable value system fails to see Indian culture as a composite entity shaped by caste, class, religion, region, and ways of life. For example, the practice of 'Sati Pratha', once construed as central to Indian culture, is today deemed one of the most savage and inhuman rituals.

## Challenging status quo

Rahul Gandhi challenged the interpretation of Indian culture as an unchanging entity by publicly condemning the Manusmriti's dictates on women. He struck at the literal text of ancient paternalism: "*Pita rakshati kaumaare, bharta rakshati yauvane, rakshanti sthavire putra; na stri swaatantryamarhati*" (a woman is protected by her father in childhood, by her husband in youth, and by her son in old age; a woman does not deserve independence). In doing so, he also drew a sharp ideological battle line against the foundational philosophy of Hindutva. It is worth remembering that M.S. Golwalkar revered Manu as the "first and greatest lawgiver of the world" and advocated for the Manusmriti to serve as the constitution of independent India.

The argument that reducing a woman's identity to just three boxes – daughter, wife, or mother – denies her the right to belong to herself seamlessly connected the everyday anxieties of young Indian women to this deep, historical architecture of male custody. No longer is the question simply whether women are safe; it is whether women are free. The call to

"break the cage" was therefore not the usual, toothless metaphor for empowerment. It was a direct assault on the idea of male guardianship.

Historically, the night has belonged to men. Girls, from a very tender age, are made to fear the night; of venturing out alone in darkness. Consequently, a woman's mental energy is consumed by the constant, exhausting labour of safeguarding her body. Simple mobility becomes a calculated risk, forcing women to monitor their posture, clothing, timing, and surroundings just to exist safely in public spaces.

While a structural shift is underway in urban India, it is driven by economic necessity rather than societal liberation. The growth of a 24/7 service economy – spanning IT, aviation, healthcare, and journalism – has propelled Indian women into night shifts. Yet infrastructure remains stubbornly hostile. Dark stretches, unlit transit hubs, a lack of clean public restrooms, and perilous last-mile connectivity ensure that night travel remains hazardous. Economic utility, therefore, must not be confused with emancipation. True spatial reclamation requires moving from forced utility to unconditional freedom, where a woman can occupy the night without fear.

In the 1970s, European and American women took to the streets at night under the banner 'Take Back the Night.' For Indian women to fully reclaim the night, the practices that negatively impact women's enjoyment of basic human rights must be done away with. Women must break the cage, take back the night, and wander.

## 2. Women Should Take Back the Night

Source: The Hindu

GS Subject: GS-1 — Indian Society | GS-2 — Gender Justice, Women's Rights & Social Empowerment

1. **Context:** “Taking back the night” refers to reclaiming women’s equal right to use public spaces after dark, challenging the social norms, fear of violence and inadequate infrastructure that restrict women’s nighttime mobility.

### 2. The Night as a Gendered Space

- **Unequal freedom:** Men generally enjoy greater freedom to move through public spaces at night, while women are often expected to return home early or avoid certain locations.
- **Social conditioning:** Families and society frequently associate nighttime mobility by women with **risk, vulnerability or social impropriety**.
- **Restricted citizenship:** When women cannot freely access streets, transport, workplaces or recreational spaces after dark, their **equal participation in public life** is compromised.

### 3. Safety Should Not Become a Restriction

- **Conventional response:** Women are advised to avoid travelling alone, dress or behave cautiously, return early or stay away from unsafe areas.
- **Problem:** Such measures can place the burden of preventing violence on **potential victims rather than perpetrators and institutions**.
- **Rights-based response:** The objective should be to **eliminate unsafe conditions**, allowing women to exercise their freedom rather than restricting that freedom.

### 4. Changing Socio-Economic Reality

- **24-hour economy:** Modern urban life increasingly extends beyond daylight hours.
- **Women’s employment:** Women work in healthcare, aviation, hospitality, media, transport, security and other sectors requiring **late-night or irregular shifts**.
- **Economic consequence:** Unsafe nighttime mobility can discourage women from accepting jobs and thereby affect **labour-force participation and economic independence**.
- **Urbanisation:** Migration and growing cities make safe and independent mobility increasingly important.

### 5. Infrastructure Determines Freedom

- **Street lighting:** Poorly lit roads and isolated stretches increase insecurity.
- **Public transport:** Infrequent or unsafe transport restricts independent movement after dark.
- **Last-mile connectivity:** The journey between a transport stop and home/workplace can be particularly vulnerable.
- **Urban design:** Safe pedestrian infrastructure, active public spaces, accessible toilets and well-designed transit points are essential.
- Therefore, **women's safety is also an urban-governance and infrastructure issue**, not merely a policing issue.

## 6. Patriarchy and the Public–Private Divide

- Patriarchal norms have traditionally associated:
  - **Women** → **home/private sphere**
  - **Men** → **public sphere**
- Restrictions on women's nighttime movement reinforce this division.
- "Taking back the night" challenges the assumption that **public space belongs more to men than women**.
- The larger goal is to establish women's **autonomy rather than dependence on male protection**.

## 7. Constitutional Perspective

- **Article 14:** Equality before law.
- **Article 15:** Prohibits discrimination on grounds including sex.
- **Article 21:** Protects life and personal liberty and has been interpreted to include **dignity and autonomy**.
- Therefore, women's freedom of movement should be viewed as part of **substantive equality and dignified citizenship**.

## 8. What Should Change?

- **Government:** Gender-sensitive urban planning, better lighting, safe public transport and effective policing.
- **Police & institutions:** Quick response, accessible reporting mechanisms and accountability for gender-based violence.
- **Employers:** Safe transport and security for women working late hours.
- **Society:** Move away from victim-blaming and norms that equate women's nighttime mobility with irresponsibility.
- **Women's participation:** Include women in designing **cities, transport systems and public-safety policies**.

# Five baby orangutans spotted in Odisha, cops suspect smuggling

**Sujit Bisoyi**

*Bhubaneswar, September 8*

LOCAL RESIDENTS roaming about a forest area near a village in Odisha's Balasore district had an unusual sighting on Tuesday — five tiny orangutans.

As the news of the rare visitors spread rapidly, thousands of onlookers gathered within an hour, forcing the forest department to rescue the wild animals.

The orangutans were spotted near the Badapai village forest in Bhograi area of the coastal district around 6am.

"We have rescued five baby orangutans and brought them to the forest office. Four of the five babies are healthy and eating food and drinking ORS. Veterinary doctors are examining and treating them and they are under the care and observation of the forest officials," Balasore Divisional Forest Officer (DFO) Pratik Prakash Indalkar told *The Indian Express*.

Though the exact age of the orangutans is not known, forest department officials said from their size — measuring 1- to 1.5 feet in height, they are likely to be juveniles. While the forest department is yet to ascertain how the apes ended up in Odisha forests, which is not their natural habitation, senior officials suspect they may have been brought into the state as part of an international wildlife-smuggling racket.

"The Wildlife Crime Control



The orangutan babies spotted in a forest area in Balasore.

Bureau, a multi-disciplinary agency by the Centre, would probe the matter as the state government suspects involvement of an international smuggling racket," said the state's forest and environment minister Ganesh Ram Singh Khuntia.

Orangutans are Asia's only great apes and are the largest tree-dwelling (arboreal) mammals on earth. Native only to the rainforests of Borneo and Sumatra, these highly intelligent primates are facing a survival crisis, with all three species classified as Critically Endangered on the IUCN Red List.

"Chances of their natural migration to the Balasore forest is less as there is no corridor link. It must be a human-induced act. We have launched an investigation through field officials to ascertain how the primates arrived in the Odisha jungle," said the

Balasore DFO.

A formal complaint has also been lodged under the relevant provisions of wildlife laws. The forest department is taking help of the police to find out involvement of any individual or racket. They have also launched a combing operation in nearby forest areas to find out if any other wild animals are present there or if there is any sign of evidence of smuggling. "The details, as to whether there is involvement of any individual or a racket, would only be known after a thorough investigation," said an official.

Cases of orangutan trafficking involve a multi-million-dollar criminal industry, said officials. Forest officials said the orangutans will most likely be brought to the Nandankanan Zoological Park in Bhubaneswar after following necessary procedures.

### 3. Five Baby Orangutans Spotted in Odisha, Cops Suspect Smuggling

Source: The Indian Express

GS Subject: GS-3 — Environment, Biodiversity Conservation & Wildlife Protection

1. **Context:** Five baby orangutans were rescued from a forest in Balasore, Odisha, raising suspicion of illegal wildlife trafficking as orangutans are not native to India.

#### 2. Basics of Orangutans

- **Taxonomy:** Orangutans are **great apes** belonging to the genus *Pongo*.
- **Species:** Three recognised species:
  - **Bornean orangutan** (*Pongo pygmaeus*)
  - **Sumatran orangutan** (*Pongo abelii*)
  - **Tapanuli orangutan** (*Pongo tapanuliensis*)
- **Distribution:** Naturally found only in **Indonesia and Malaysia**, specifically on the islands of **Borneo and Sumatra**.
- **Habitat:** Primarily inhabit **tropical rainforests** and are highly adapted to life in trees.
- **Arboreal nature:** They are among the most **arboreal of the great apes**, spending much of their lives in forest canopies.
- **Diet:** Mainly **fruit-based**, supplemented by leaves, bark, insects and other forest foods.
- **Intelligence:** Known for high cognitive ability, including **tool use, problem-solving and complex learning**.
- **Conservation status:** All three species are classified as **Critically Endangered** on the IUCN Red List.
- **Major threats:** Deforestation, habitat fragmentation, agricultural expansion, hunting and illegal wildlife trade.

#### 3. Rescue & Investigation

- The five juveniles were found near **Badapai village in the Bhogra area of Balasore district**.
- Forest officials rescued them after a crowd gathered around the animals.
- **Four were healthy and feeding**, while all five were placed under veterinary care and observation.
- Their presence in Odisha is unusual because there is **no natural orangutan habitat or ecological corridor in India**.

- Authorities suspect they may have been brought into the country through an **international wildlife-smuggling network**.
- The **Wildlife Crime Control Bureau (WCCB)** may assist in investigating the suspected trafficking link.

# 'Seven applications received for coal gasification package'

**Saptaparno Ghosh**

NEW DELHI

The coal ministry informed on Tuesday that it had received seven applications seeking financial package for setting up of coal gasification projects in the country.

In a statement, the ministry said it had received three applications from Adani Enterprises for setting up coal-to-urea gasification plants, one from Shyam Sel & Power Limited for producing syngas, and one from Gallantt Ispat Ltd. for direct reduced iron and syngas.

Earlier, the ministry had informed that NTPC Ltd. and Talcher Fertilisers (TFL) too had put forth applications. While the State-owned power distributor is seeking to produce syn-



India has a target to gasify 100 million tonnes of coal by 2030. GETTY IMAGES/ISTOCK

on September 8.

Union Minister for Coal and Mines G. Kishan Reddy termed the now-concluded window a success.

"The second window [of the rolling application system] commences today. A good number of companies applied in the first phase, and we expect that

## 4. Seven Applications Received for Coal Gasification Package

Source: The Hindu

GS Subject: GS-3 — Energy, Coal, Industrial Development & Clean Technology

1. **Context:** The **Ministry of Coal** has received **seven applications** seeking financial support for setting up coal-gasification projects under the government's coal-gasification scheme.

### 2. Coal Gasification — Basics

- **Coal gasification** converts coal into **syngas** by reacting it with oxygen/air and steam under controlled conditions.
- **Syngas** mainly contains **carbon monoxide (CO) and hydrogen (H<sub>2</sub>)**.
- It can be further processed to produce **Synthetic Natural Gas (SNG), hydrogen, methanol, fertilisers, chemicals and other industrial products**.
- Unlike conventional combustion, where coal is burnt primarily to generate heat, gasification converts coal into a **gaseous industrial feedstock**.

### 3. Why India is Promoting Coal Gasification

- **Utilisation of domestic coal:** India can convert its abundant coal resources into higher-value products.
- **Import substitution:** Domestic production of fertilisers, chemicals and synthetic fuels can reduce dependence on imports.
- **Fertiliser security:** Gasification can provide feedstock for **urea production**.
- **Industrial diversification:** Coal can be used as a feedstock for multiple industrial applications beyond power generation.

### 4. Government Target & Scheme

- India has set a target to **gasify 100 million tonnes of coal by 2030**.
- The government provides **financial assistance** to encourage commercial-scale coal-gasification projects.
- Applications are being invited through a **rolling-window system**, allowing companies to submit proposals in successive rounds.

### 5. Significance

- **Energy security:** Diversifies India's domestic energy and industrial feedstock base.
- **Economic value addition:** Converts coal into **syngas and higher-value products**.
- **Fertiliser security:** Supports domestic production of urea and other fertiliser inputs.

- **Reduced import dependence:** Can reduce reliance on imported natural gas and certain industrial feedstocks.

## 6. **Environmental Challenge**

- Coal gasification is **not a zero-emission technology** and can involve substantial carbon emissions.
- Its environmental performance can be improved through **higher-efficiency technologies and Carbon Capture, Utilisation and Storage (CCUS)**.
- Therefore, coal gasification should be viewed alongside India's broader transition towards **cleaner and lower-carbon energy sources**.

# Have complete trust in ISRO: French space agency

**Hemanth C.S.**

PARIS

The French space agency Centre National d'Etudes Spatiales (CNES) has said that it is not perturbed with the back-to-back failures of the Indian Space Research Organisation's (ISRO)'s workhorse rocket, the Polar Satellite Launch Vehicle (PSLV), and has complete trust in its Indian partner.

The PSLV is scheduled to launch the Indo-French TRISHNA (Thermal Infra-Red Imaging Satellite for High-resolution Natural Resource Assessment) mission next year. It is a collaborative endeavour between the ISRO and the CNES.

"There is always a risk with launches and we know the risks. You must trust your partners and



The ISRO is scheduled to launch the Indo-French TRISHNA mission on PSLV next year.

trust is very important in space cooperation because we do difficult things together and to do difficult things you trust each other. ISRO is a huge space player in the world, they know what to do. So we trust them for the launch and the satellite also," Lionel Suchet, Chief Operating Officer, CNES, told *The Hindu*.

The PSLV had suffered two setbacks. On January 12, 2026, the PSLV-C62 mission carrying the EOS-N1 earth observation satellite failed to finish its intended trajectory after an anomaly was detected during the end of the third stage of the launch vehicle. On May 18, 2025, the PSLV-C61 mission had also failed due to an anomaly in the third stage of the rocket.

TRISHNA is engineered to deliver high spatial and high temporal resolution monitoring of earth's surface temperature, emissivity, and biophysical and radiation variables for surface energy budgeting at regional to global scale.

*(The reporter is in Paris at the invitation of France's Ministry for Europe and Foreign Affairs to cover the International Space Summit)*

## 5. Have Complete Trust in ISRO: French Space Agency

Source: The Hindu

GS Subject: GS-3 — Space Technology | India–France Space Cooperation

1. **Context:** France's space agency CNES has reaffirmed its confidence in ISRO's PSLV despite two recent launch failures, as ISRO and CNES prepare for the launch of their joint TRISHNA Earth-observation mission.

## 2. **TRISHNA Mission**

- **TRISHNA** stands for **Thermal InfraRed Imaging Satellite for High-resolution Natural resource Assessment**.
- It is a **joint ISRO–CNES Earth-observation mission** scheduled for launch on the **PSLV**.
- Its primary objective is to obtain **high spatial and temporal resolution data on Earth's surface temperature and related environmental parameters**.
- The mission will measure:
  - **Land-surface temperature and emissivity**
  - **Biophysical variables**
  - **Radiation-related parameters**
- These observations will help in **surface-energy budgeting, water-stress assessment, agriculture, ecosystem monitoring and climate studies**.

## 3. **Why TRISHNA is Important**

- **Natural-resource management:** High-resolution thermal data can help monitor water availability, vegetation and agricultural conditions.
- **Climate & environment:** Surface-temperature observations can improve understanding of **heat stress, evaporation, drought and environmental changes**.
- **High-resolution monitoring:** Its combination of high spatial and temporal resolution will allow more frequent and detailed observation of changes on Earth's surface.
- **Scientific cooperation:** It represents advanced collaboration between India and France in **Earth observation and climate-related space applications**.

## 4. **PSLV & Recent Setbacks**

- **PSLV (Polar Satellite Launch Vehicle)** is one of ISRO's principal satellite launch vehicles, widely used for Earth-observation missions.
- It suffered two recent setbacks:
  - **PSLV-C61 — May 2025:** Mission failure following an anomaly in the **third stage**.
  - **PSLV-C62 — January 2026:** Mission carrying **EOS-N1** failed to complete its intended trajectory following an anomaly during the **third stage**.
- Despite these failures, **CNES has maintained confidence in ISRO and the PSLV**, reflecting the importance of long-term institutional trust in space cooperation.

## 5. **India–France Space Cooperation**

- **ISRO–CNES cooperation** covers areas including Earth observation, space science and related technologies.
- TRISHNA strengthens this partnership by combining:
  - **ISRO:** satellite development and launch capabilities.
  - **CNES:** expertise in Earth-observation technologies and scientific applications.
- Such cooperation expands India's capabilities in **climate monitoring, environmental observation and space-based resource assessment**.

● THE STUDY HAS IDENTIFIED 21 GENETIC REGIONS LINKED TO ENDOMETRIOSIS, OFFERING NEW CLUES TO WHY SOME WOMEN MAY BE MORE PRONE TO THE DISEASE

## Endometriosis could be genetic, reveals 1st Indian genome study

**Anuradha Mascarenhas**  
Pune, September 8

FOR YEARS, women with endometriosis — a condition in which tissue lining the uterus overgrows outside it — have been telling doctors the same story: severe period pain, chronic pelvic pain or infertility, often after years of suffering and sometimes with a mother or sister reporting similar symptoms.

Now, India's first genome-wide study of the disease has found evidence that genetic susceptibility may play a role in Indian women, while also identifying genetic signals that could be particularly relevant to the Indian population.

The study, published in Scientific Reports, identified 21 suggestive genetic regions associated with endometriosis in Indian women. Researchers also found genetic signals with previously identified endometriosis triggers and found that a risk score developed from European populations showed relevance in the Indian cohort.

The findings are not ready for clinical use or individual risk prediction. But researchers say they provide an important starting point for larger studies, particularly among South Asian populations that have been underrepresented in genetic research on endometriosis. "When I started working on endometriosis research nearly two decades ago, I was struck by how many women had lived for years with severe period pain, chronic pelvic pain or infertility before receiving a diagnosis," said Dr Rahul Gajbhiye, Scientist and Head, Clinical Research Laboratory, ICMR–National Institute for Research on Women's Health (NIRWoh), Mumbai, and principal investigator of the study.

"Some women also told me that their mother or sister had suffered from very similar symptoms but had never been diagnosed. At that time, I could see a possible familial pattern, but I did not have the scientific tools or Indian genetic data to answer why this was happening," he said.

**Indian genetic dataset**

Dr Gajbhiye began examining the genetic basis of endometriosis more systematically during his INSA postdoctoral fellowship at the University of Queensland, Australia, in 2017–18, where he received training in the genetics and genomics of the disease. After returning to India, he was awarded a DBT Wellcome India Alliance Clinical and Public Health Intermediate Fellowship in 2019. The fellowship enabled the establishment of Endometriosis Clinical and Genetic Research in India (ECGRI) initiative and the creation of a clinical and genomic dataset of Indian women.

The study involved 18 centres across India, bringing together gynaecological laparoscopic surgeons, clinicians, researchers and laboratory teams. Women with surgically confirmed endometriosis and control participants were recruited from different regions and ancestry backgrounds.

Dr Sandhya Anand, lead author of the study, said the 21 suggestive genetic regions provided new leads for understanding endometriosis in Indian women. "Our findings are not for immediate clinical testing, but they provide an important foundation for future South Asian studies on endometriosis biology, genetic risk and early recognition," she said.

Endometriosis affects about 10% of women of reproductive age, according to widely cited estimates. Despite its prevalence, diagnosis is often delayed for years, with symptoms such as severe menstrual pain frequently normalised or dismissed.

Researchers say the problem is particularly important in India, where awareness, access to specialised care and population-specific research proof remain limited.

Much of the existing genetic research on endometriosis has been based on populations of European ancestry. The new Indian dataset, therefore, adds an important South Asian component to global research into the disease.

The study comes as the World Health Organization (WHO) is developing new guidelines on endometriosis management, reflecting the growing recognition of the disease as a major public health concern.

## 6. Endometriosis Could Be Genetic, Reveals 1st Indian Genome Study

Source: The Indian Express

GS Subject: GS-3 — Science & Technology | Health & Biotechnology

1. **Context:** India's first genome-wide study of endometriosis has identified 21 genetic regions associated with the disease, providing evidence of genetic susceptibility among Indian women and a foundation for future South Asian research.

### 2. Endometriosis — Basics

- **Endometriosis** occurs when tissue similar to the **uterine lining (endometrium)** grows outside the uterus.
- It can cause **severe menstrual pain, chronic pelvic pain and infertility**.
- It affects around **10% of women of reproductive age**.
- Diagnosis is frequently delayed because symptoms, particularly menstrual pain, may be **normalised or overlooked**.

### 3. Key Findings

- The study identified **21 genetic regions** associated with endometriosis among Indian women.
- Some genetic signals were previously identified in other populations, while others may have particular relevance to **Indian women**.
- Reports of similar symptoms among **mothers and sisters** also indicate a possible familial component.
- The findings suggest that **genetic susceptibility is one factor influencing an individual's risk**, alongside other biological and environmental factors.

### 4. Significance of an Indian Genome Dataset

- Earlier endometriosis genomic research has largely focused on **European-ancestry populations**.
- South Asian populations have been relatively **underrepresented** in genetic research.
- An Indian dataset can help identify **population-specific genetic factors** and improve understanding of endometriosis biology among South Asian women.

### 5. Potential Applications

- The identified genetic regions could help researchers understand the **biological pathways involved in endometriosis**.
- In the long term, this may contribute to:
  - **Earlier recognition and diagnosis**
  - Identification of individuals with greater genetic susceptibility
  - Development of new **therapeutic targets**
- However, the findings are **not yet suitable for individual genetic risk prediction or immediate clinical testing**.

### 6. Study & Public Health Significance

- The study involved **18 centres across India**, bringing together clinicians, researchers, gynaecological surgeons and laboratories.
- It strengthens India's **population-specific genomic evidence** on endometriosis.
- This is particularly important in India because **awareness, access to specialised care and disease-specific research remain limited**.
- The research can contribute to better understanding of a condition that significantly affects **women's reproductive health and quality of life**.

TEHRAN-BACKED HOUTHIS ACCUSE RIYADH OF LAUNCHING AIRSTRIKES ON YEMEN

# Houthi strike oil facilities in 4 Saudi cities as war expands

US submersible captured near Strait, says IRGC

Reuters

Cairo, Dubai, September 8

YEMEN'S TEHRAN-backed Houthi attacked four cities in the south of US ally Saudi Arabia Tuesday, injuring over 70 people and setting oil installations ablaze in what appeared to be a major expansion of the six-month-old West Asia war.

The Houthis said they launched a broad operation deep into Saudi territory. They used drones and missiles to strike a Saudi airbase in southern city of Khamis Mushait, and targets belonging to Saudi Arabia's state oil company in nearby Abha, Najran on the Yemeni border, and Jazan, a major Red Sea port city that houses a large refinery and power plant.

NASA satellite images showed a thick cloud of black smoke over the Jazan refinery and a column of white smoke rising from an oil distribution centre in Abha.

Saudi authorities described blazes at the sites and said women and children were among the 73 people hurt. The reports of such large numbers of



wounded suggested the attacks were among the biggest carried out against Saudi Arabia since the US and Israel launched their war against Iran in February.

The Houthis released pictures of explosions of what they said were trucks from Saudi Arabia they had hit in separate strikes at the border in another area the previous day.

Houthi-controlled media reported later on Tuesday that Saudi warplanes had carried out airstrikes in Yemen's Jubah district east of the capital Sanaa and Taiz province in the southwest.

Saudi Arabia has led an Arab coalition battling against the Houthis in Yemen for more than a decade. That war had calmed in recent years, but a ceasefire there has broken down, with the Houthis threatening shipping at

the mouth of the Red Sea.

The International Organization for Migration said more than 18,500 people had fled their homes because of fighting along Yemen's west coast over the past three days. "The coalition will take all necessary operational measures to deter this terrorist militia and resolutely confronts its hostile approach," Turki al-Malki, spokesperson for the Saudi-led coalition, said.

Houthi spokesperson Yahya Saree accused Riyadh of having escalated the war by launching airstrikes on Yemen, and said the Houthis would respond.

Meanwhile, the navy of Iran's Revolutionary Guards said on Tuesday it had captured an unmanned US submersible at the mouth of the strait. There was no confirmation from Washington.

US imposes 36 fresh sanctions on Iran, aviation sector targeted

Washington: The United States on Tuesday issued 36 fresh Iran-related sanctions targeting Iran's aviation sector and other companies as part of a broad push to escalate economic pressure on Tehran as the war in West Asia entered a seventh month.

The US Treasury Department said the action was aimed at grounding Iran's Mahan Air, already sanctioned by the US and the EU, and all other Iranian airlines.

The sanctions also took aim at covert front companies, foreign intermediaries and deceptive trans-shipment routes that Washington says Iran relies on to obtain US-origin aircraft and sensitive technology.

The Treasury also issued an alert asking financial institutions to report any procurement networks supporting Iran's aviation industry, while designating firms based in Turkey and the UAE that it said helped Tehran procure US-origin aircraft and sensitive technology. **Reuters**

## 7. Houthi Strike Oil Facilities in 4 Saudi Cities as War Expands

Source: Reuters

GS Subject: GS-2 — International Relations | West Asia | Geopolitics & Energy Security

1. **Context:** Iran-backed Houthi forces attacked targets in four Saudi cities, including oil facilities, marking a significant escalation of the Yemen–Saudi conflict and widening instability across West Asia.

## 2. **Houthi Attacks on Saudi Arabia**

- The Houthis claimed to have launched a **broad operation deep inside Saudi territory** using **drones and missiles**.
- Targets included:
  - **Khamis Mushait:** Saudi airbase.
  - **Abha and Najran:** Facilities belonging to Saudi Arabia's state oil company.
  - **Jazan:** A major Red Sea port city, including a refinery and power facility.
- Saudi authorities reported fires and casualties, with **more than 70 people reportedly injured**.
- Satellite imagery showed significant smoke over the **Jazan refinery and Abha oil-distribution area**.

## 3. **Yemen Conflict & Regional Escalation**

- Saudi Arabia has led an Arab coalition against the Houthis in Yemen for **more than a decade**.
- The conflict had relatively eased in recent years but has intensified again amid the broader **West Asian crisis**.
- Houthi attacks on Saudi territory and threats to regional shipping increase the risk of the conflict spreading beyond Yemen.
- The **Bab-el-Mandeb Strait**, at the southern entrance of the Red Sea, remains strategically important because disruption here can affect **global maritime trade and energy transportation**.

## 4. **Humanitarian Impact**

- The **International Organization for Migration (IOM)** reported that more than **18,500 people were displaced from their homes** because of fighting along Yemen's western coast over the preceding three days.
- Continued escalation could further aggravate **displacement, humanitarian insecurity and civilian suffering**.