16th January 2026: DSC

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Malayalam Language Bill, 2025

Why in News?

The Kerala government introduced and passed the Malayalam Language Bill, 2025 in the State Legislative Assembly on 6 October 2025.
The Bill, having undergone Subject Committee examination, is currently awaiting the Governor's assent.
The legislation has drawn opposition from Karnataka, which argues that it is unconstitutional and detrimental to Kannada-speaking linguistic minorities, particularly in the border district of Kasaragod.

Relevance

GS II | Polity & Governance

- Official language policy and State legislative powers
- Centre–State relations and federal accommodation
- Protection of linguistic minorities under Articles 29–30 and 345–347
- Constitutional role of the Governor

Key Provisions of the Malayalam Language Bill, 2025

Core Features

- Malayalam is formally designated as the sole official language of Kerala.
- At present, both Malayalam and English enjoy official recognition.
- The Bill mandates the use of Malayalam across multiple domains:
    - Government administration
    - Educational institutions
    - Judiciary (through phased translation of judgments)
    - Public communication and commerce
    - Digital governance and IT platforms
- All Bills and Ordinances must be introduced in Malayalam.

Education-Related Provisions

- Malayalam is prescribed as the compulsory first language:
    - In government and government-aided schools
    - Up to Class 10
- The mandate does not automatically extend to:
    - Unaided private schools
    - CBSE or ICSE institutions, unless notified separately

Institutional and Administrative Measures

- Renaming of the Personnel and Administrative Reforms (Official Language) Department as the Malayalam Language Development Department.
- Establishment of a Malayalam Language Development Directorate.
- The IT Department is tasked with creating open-source digital tools and software to facilitate Malayalam use in e-governance.

Earlier Legislative Attempts

Kerala had earlier proposed measures to strengthen Malayalam's official usage over a decade ago, but these initiatives did not culminate in comprehensive statutory enforcement.
The 2025 Bill is wider in scope, extending language promotion to education, judiciary, and digital governance.

Karnataka's Objections

Linguistic Minority Concerns

- Kannada-speaking populations in Kerala—especially in Kasaragod—may be adversely affected.
- Students currently studying Kannada as their first language could face pressure to shift to Malayalam.
- Data indicates a decline in Kannada-medium schools in Kasaragod, reinforcing concerns of linguistic erosion.

Constitutional Arguments

- Karnataka contends that the Bill undermines minority linguistic rights.
- It is alleged to conflict with the spirit of Articles 29 and 30.

- The Karnataka Chief Minister has indicated that constitutional remedies, including approaching the President, may be pursued.

Is Malayalam Mandatory in All Schools?

Not entirely.

- The requirement applies only to government and aided schools.
- It is limited to education up to Class 10.
- Private unaided institutions retain autonomy, subject to policy guidelines.
- Specific safeguards exist for linguistic minorities.

Kerala Government's Justification

Minority Safeguards

- Special provisions exist for Tamil, Kannada, Tulu, and Konkani speakers.
- Linguistic minorities may use their mother tongue for official correspondence with:
    - The State Secretariat
    - Department heads
    - Local bodies in minority-dominated regions

Constitutional Alignment

The State government asserts that the Bill is consistent with:

- The Official Languages Act, 1963
- Articles 346 and 347 governing inter-State communication and minority language recognition

A non-obstante clause (Clause 7) ensures protection of minority rights.

Federal and Governance Implications

The Bill raises fundamental questions about:

- Balancing State authority to promote its official language
- Safeguarding minority linguistic rights in border regions

It tests the principles of cooperative federalism and cultural pluralism.

Assessment

Strengths:

- Reinforces cultural identity and vernacular governance
- Improves access to justice through translated judgments
- Supports digital inclusion
- Aligns with NEP 2020's emphasis on mother-tongue education

Challenges:

- Sensitivities in linguistically mixed border districts
- Decline of minority-language institutions
- Risk of inter-State tensions and politicisation

Way Forward

- Explicit statutory exemptions for border linguistic pockets
- District-specific flexibility in language education
- Structured inter-State dialogue mechanisms
- Periodic review of minority-language schools
- Judicial clarity post-assent, if challenged

Futuristic Marine and Space Biotechnology

Core Idea

This frontier area of biotechnology focuses on harnessing life forms from extreme and underexplored environments such as:

- Deep oceans
- Outer space

The objective is to generate new biological knowledge and develop innovative materials, processes, and biomanufacturing techniques.

Relevance

GS III | Science & Technology / Economy

- Biotechnology and biomanufacturing
- Frontier technologies
- Blue Economy and Deep Ocean Mission
- Space biology and long-duration missions

GS II | Governance

- Mission-mode programmes
- Science policy coordination

Marine Biotechnology

Focus Areas

- Marine microorganisms
- Algae and seaweeds
- Deep-sea organisms

Applications

- Bioactive compounds for pharmaceuticals and nutraceuticals
- Industrial enzymes
- Biomaterials and food ingredients
- Biostimulants

Marine organisms thrive under extreme pressure, salinity, and low-light conditions, producing molecules rarely found in terrestrial life.

Space Biotechnology

Research Conditions

- Microgravity
- High radiation environments

Areas of Study

- Microbial behaviour
- Plant growth
- Human physiological changes

Applications

- Closed-loop life-support systems
- Space-based food production
- Protein crystallisation and drug discovery
- Regenerative medicine
- Long-duration human space missions

Global Developments

European Union:

- Heavy investment in marine bioprospecting and algae-based materials
- Shared infrastructure like the European Marine Biological Resource Centre
- Integrated research–industry–sustainability policy

China:

- Rapid expansion of seaweed cultivation and marine bioprocessing
- Emphasis on scale and exports

United States:

- Leadership in space biotechnology via NASA and the ISS
- Advances in microbial research, stem cells, and space manufacturing

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Why India Must Invest in These Frontiers

Natural Advantages

- ~11,000 km coastline
- ~2 million sq. km EEZ
- Rich marine biodiversity

Strategic Need

- India's share in global marine bio-output remains limited
- Marine biotechnology can provide sustainable sources of food, energy, and materials while reducing land and freshwater stress
- Space biotechnology is critical for human spaceflight and long-term habitation

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India's Current Position

Marine Biotechnology

- Seaweed production: ~70,000 tonnes annually
- Continued dependence on imports for agar, carrageenan, and alginates
- Policy support through Blue Economy, Deep Ocean Mission, and BioE3
- Emerging private players and ICAR-led research institutions

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Space Biotechnology

- ISRO's microgravity experiments on microbes and algae
- Focus on space food, life-support regeneration, and astronaut health

Why These Are "Futuristic" Domains

- High entry barriers and long gestation periods
- First-mover advantage yields technological leadership and strategic autonomy

Challenges

- Fragmented R&D ecosystem
- Limited marine biomass scale
- Weak research–industry linkages
- Absence of a clear national roadmap

Way Forward

- Develop a dedicated national roadmap for marine and space biotechnology
- Set milestones, funding priorities, and translational pathways
- Strengthen shared research infrastructure and PPPs
- Integrate BioE3, Blue Economy, and space missions
- Promote export-oriented marine biomanufacturing

NGT's Suo Motu Action on Sewage-Contaminated Drinking Water

Why in News?

The National Green Tribunal took suo motu cognisance of media reports highlighting sewage contamination of drinking water in Rajasthan, Madhya Pradesh, and Uttar Pradesh.
The Principal Bench issued notices to State governments and agencies and directed the CPCB to respond.

Relevance

GS III | Environment

- Water pollution
- Urban environmental governance

GS II | Polity & Governance

- Role of NGT
- Responsibilities of Urban Local Bodies under Article 243W

Findings and Evidence

Reports revealed:

- Decades-old, corroded pipelines
- Drinking water lines passing through open sewage drains

Health impacts included:

- Vomiting and diarrhoea in Greater Noida
- Detection of E. coli in Bhopal's drinking water
- Fatalities linked to contaminated water in Indore

The NGT found prima facie violations of the Water Act, 1974 and the Environment Protection Act, 1986.

Legal Basis and Jurisdiction

NGT exercises suo motu powers when credible information indicates environmental harm. Water contamination qualifies as both environmental pollution and a public health threat.

Issues Identified

- Infrastructure decay and poor maintenance
- Weak municipal surveillance and accountability
- Public health emergencies in dense urban areas
- Regulatory non-compliance

Constitutional and Governance Dimensions

- Article 21 encompasses the right to safe drinking water
- Article 243W assigns water supply and sanitation to ULBs
- Fragmented Centre–State–ULB coordination highlighted

Accountability Measures

States were directed to submit affidavits detailing:

- Sources of contamination
- Pipeline age and materials
- Immediate containment actions
- Health surveillance and compensation plans

Challenges

- Chronic underinvestment
- Lack of real-time water monitoring
- Reactive rather than preventive governance

Way Forward

- Emergency disinfection and alternate water supply
- Pipeline audits and replacement
- Ward-level water testing with public dashboards
- Strengthening SPCBs and ULB capacity
- Enforcement of Water Act standards

Ganga Biodiversity Recovery

Why in News?

Recent scientific assessments report:

- 230 fish species recorded in the Ganga—highest in nearly 50 years
- Over 3,000 gharials across the Ganga basin

Relevance

GS III | Environment & Ecology

- Riverine biodiversity
- Flagship species conservation

GS II | Governance

- Basin-level coordination

Fish Biodiversity Trends

Surveys across 2,525 km of the river and its tributaries show a strong recovery from earlier declines, though diversity varies spatially.

Gharial Status

- Over 3,000 individuals recorded

- Chambal River remains the main stronghold
- Gharials serve as indicators of river health

Drivers of Recovery

- Namami Gange Mission
- Improved sewage treatment
- Environmental flow norms
- Fish restocking by ICAR institutes

Governance and Livelihood Implications

- Multi-agency coordination critical
- Inland fisheries support nutrition and livelihoods
- Potential for eco-tourism with safeguards

Challenges and Way Forward

- Uneven recovery across river stretches
- Continued pressures from dams, sand mining, and bycatch
- Need for basin-wide habitat restoration and e-flow enforcement

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INS Kaudinya's Voyage to Muscat

Why in News?

INS Kaudinya completed a landmark voyage to Muscat, retracing ancient Indian Ocean trade routes using a traditional hand-stitched wooden vessel.

Relevance

GS II | International Relations

- Maritime diplomacy
- India–Oman relations

GS III | Security

- Maritime awareness
- SAGAR doctrine

About INS Kaudinya

- Built using traditional shipbuilding techniques without metal fastenings
- Operated as a functional seagoing vessel
- Named after the ancient mariner Kaudinya

Historical and Cultural Significance

The voyage highlights India's long-standing maritime trade with West Asia, East Africa, and Southeast Asia, where Indian merchants carried goods, culture, and ideas.

Strategic Significance

- Reinforces India's soft power through civilisational diplomacy
- Supports Indo-Pacific vision and SAGAR doctrine
- Projects India as a historic maritime civilisation

Knowledge and Security Dimensions

- Validates indigenous shipbuilding knowledge
- Enhances maritime awareness and naval outreach
- Symbolically supports India's role as a net security provider in the IOR

Way Forward

- Institutionalise heritage voyages
- Integrate findings into curricula and museums
- Link maritime heritage with contemporary Indo-Pacific strategy

16th January 2026: Daily MCQs

1. With reference to the **Malayalam Language Bill, 2025**, consider the following statements:
    1. It designates Malayalam as the sole official language of Kerala.
    2. It mandates Malayalam as the compulsory first language in all schools in the State.
    3. It contains a special clause safeguarding linguistic minorities.

Which of the statements given above is/are correct?
(a) 1 and 3 only
(b) 1 only
(c) 2 and 3 only
(d) 1, 2 and 3

Answer: (a)

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2. The constitutional provision that empowers a State Legislature to adopt its official language(s) is:
   (a) Article 343
   (b) Article 345
   (c) Article 346
   (d) Article 347

Answer: (b)

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3. Futuristic **marine biotechnology** primarily derives its advantage from organisms that:
   (a) Have rapid reproductive cycles
   (b) Are genetically similar to terrestrial organisms
   (c) Are adapted to extreme pressure, salinity, and low light
   (d) Are found only in shallow coastal waters

Answer: (c)

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4. Space biotechnology is especially relevant for which of the following objectives?

   1. Closed-loop life-support systems
   2. Protein crystallisation for drug discovery
   3. Long-duration human space missions

Select the correct answer using the code below:
(a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

Answer: (d)

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5. The **National Green Tribunal (NGT)** can take suo motu cognisance of environmental issues primarily because:
   (a) It derives powers from the Indian Penal Code
   (b) It functions as an appellate authority of High Courts
   (c) Environmental harm affects public interest and fundamental rights
   (d) Media reports are treated as statutory evidence

Answer: (c)

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6. Detection of **E. coli** in drinking water most directly indicates:
   (a) Industrial chemical pollution
   (b) Heavy metal contamination

(c) Faecal contamination from sewage
(d) Agricultural runoff

Answer: (c)

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7. With reference to **Ganga biodiversity recovery**, consider the following statements:

    1. Fish diversity is a proxy indicator of river health.
    2. Gharial recovery reflects improved flow and habitat conditions.
    3. Biodiversity recovery is uniform across all stretches of the river.

Which of the statements given above is/are correct?
(a) 1 and 2 only
(b) 2 and 3 only
(c) 1 only
(d) 1, 2 and 3

Answer: (a)

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8. The river stretch with the strongest population of **gharials** in the Ganga basin is:
   (a) Son River
   (b) Gandak River
   (c) Chambal River
   (d) Ghaghara River

Answer: (c)

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9. INS Kaudinya's voyage is significant mainly because it:
   (a) Demonstrates India's naval combat capability
   (b) Retraces ancient Indian Ocean trade routes using traditional shipbuilding
   (c) Establishes a permanent naval base in Oman
   (d) Tests nuclear-powered maritime propulsion

Answer: (b)

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10. The concept of **SAGAR** in India's maritime strategy primarily emphasises:
    (a) Naval expansion and force projection
    (b) Exclusive economic control of sea lanes
    (c) Security and growth through regional cooperation
    (d) Militarisation of the Indian Ocean Region

Answer: (c)

UPSC CSE MAINS QUESTIONS

1. Language policy often tests the balance between cultural promotion and minority rights. Examine the constitutional and federal implications of the Malayalam Language Bill, 2025. (250 words)