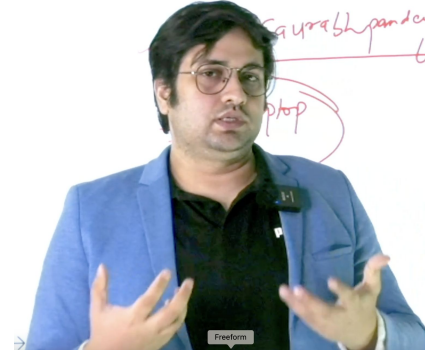


# Topics - MINDS MAPS included



- Indian Classical Languages
- Mass wasting
- Sonoluminescence
- Why Volcanic Eruption in Iceland?
- 
- **Hema Committee Report**
- Justice verma committee / death penalty for rape
- Mount GAMALAMA
- Lateral Entry
- Why is sanction required to prosecute a public servant?
- humpback whales & 'bubble-nets
- Anosmia
- Overview of RTPCR

**Mains**



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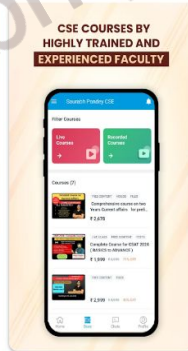
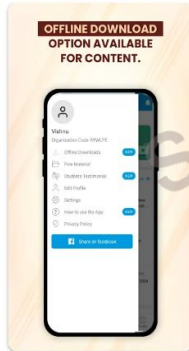
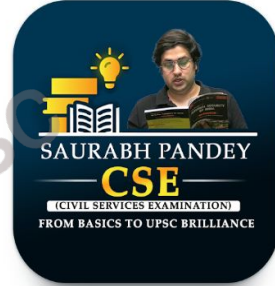
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# Topic- Indian Classical Languages



## Overview of Indian Classical Languages

**Definition:** Languages with ancient literary traditions

**Significance:** Cultural heritage and identity

## Major Indian Classical Languages

### Sanskrit

Ancient scriptures and texts

Importance in Hinduism, Buddhism, Jainism

### Tamil

Oldest living language

Rich literary tradition

### Telugu

Promotion of classical status

Rich literary history

## **Kannada**

**Unique script and literature**

## **Odia**

**Prominent classical literature**

## **Malayalam**

**Evolving literary forms**

## **Persian**

**Recently included as a classical language in India**





- **India has six classical languages — Tamil, Sanskrit, Telugu, Kannada, Malayalam, and Odia.**
- **While four of the centres for classical languages function under the aegis of the Central Institute of Indian Languages (CIIL), Mysuru, the centre for Tamil is autonomous.**
- **For the promotion of Sanskrit, dedicated universities also receive funds directly from the Union Education Ministry.**

- **Once a language is notified as a classical language, the Education Ministry provides certain benefits to promote it, including two major annual international awards for scholars of eminence in the said languages.**
- **A Centre of Excellence for Studies in the classical language is set up, and the University Grants Commission is requested to create a certain number of Chairs for the classical language at least in the Central Universities.**

## Current Issues and Developments

**Autonomy Demand:** Centers for promotion of classical languages demand autonomy for better functioning 🔍

**Government Policies:** Potential tweaks in criteria for classical language status ⚖️

**New Education Policy:** Inclusion of Persian as a classical language 📝

## Future Directions

**Promotion:** Increased awareness and education regarding classical languages 📚

**Research:** Focus on linguistic studies and preservation efforts 🔬

# Topic- Mass wasting

## Overview

**Definition:** The movement of rock or soil down slopes under the force of gravity. 🌍

**Types:** Rock falls, slumps, debris flows, etc. 🪨

**Causes:** Triggered by factors like rapid snow melt, intense rainfall, earthquakes, and slope oversteepening. ⚡

## Types:

Landslides  
Mudslides  
Rockfalls  
Earthflows

## Causes of Mass Wasting

### Natural Factors:

Heavy rainfall   
Earthquakes   
Weathering and erosion

### Human Activities:

Deforestation   
Construction and excavation  
Mining operations

# Effects of Mass Wasting

## Geological Impacts:

Landscape alteration

Changes in drainage patterns

## Human Impacts:

Damage to infrastructure 

Loss of life and property

Displacement of communities

**California Mudslides:** Analyzes causes and impacts of recent mudslides in California.

## Prevention and Mitigation

### Engineering Solutions:

Retaining walls

Drainage systems

Slope stabilization techniques

### Community Awareness:

Education on risks

Emergency preparedness plans

## Case Studies

**Cascadia Subduction Zone: Examines mass wasting events in seismic zones.**

## Recent study in the sedongpu gully

- A new study on the high frequency of mass wasting events in the Sedongpu Gully of the Tibetan Plateau since 2017 and the rapid warming of the area, which rarely experienced temperatures beyond 0°C before 2012, could be bad signs for India, specifically the country's northeast.
- A geological event, mass wasting is the gravity-influenced movement of rock and soil down a slope.
- A gully is a landform created by erosion from running water, mass movement or both. The Sedongpu Gully, in the catchment of the Sedongpu glacier and its valley, is 11 km long and covers 66.8 sq. km.





- **It drains into the Yarlung Zangbo, or the Tsangpo River, near where it takes a sharp turn — called the Great Bend — while flowing around Mt. Namcha Barwa (altitude 7,782 metres) and Mt. Gyala Peri (7,294 metres) to create a gorge 505 km long and 6,009 metres deep.**
- **This is one of the deepest gorges on the earth.**
- **The Great Bend is close to Tibet's border with Arunachal Pradesh, where the Tsangpo flows as the Siang river.**
- **In Assam further downstream, the Siang meets the Dibang and Lohit to form the Brahmaputra, which flows as the Jamuna in Bangladesh.**

- **The combination of long-term warming and intense local shaking due to earthquakes has greatly enhanced landslide activity in the area.**
- **The impact on humans has been low because it is so remote. However, environment scientists in Assam said the study underlining landslides was ominous for areas hundreds of kilometres downstream.**
- **The threat has been accentuated by big dams such as the 510-MW Zangmu on the Tsangpo and India's planned projects on the Siang.**

- **“China plans to set up a 60-gigawatt project on the Tsangpo, which will [have] thrice the capacity of the Three Gorges project on the Yangtze, the world’s largest hydropower plant,**
- **“This region is characterised by enormous geophysical instability and experienced the 8.6-magnitude Assam-Tibet or Medog earthquake in 1950, one of the biggest of the 20th century**

- **“The Sedongpu study has serious implications for the Tsangpo-Siang-Brahmaputra-Jamuna, especially in India and Bangladesh.**
- **The most direct consequence could be the addition of major amounts of sediments to the course of the river, already one of the most sediment-laden rivers of the world,**
- **The Brahmaputra carries more than 800 tonnes of sediment at Pandu in Guwahati, becoming more than a billion tonnes at Bahadurabad in Bangladesh.**

- **“The sedimentation can elevate the river beds more, accentuating flood hazards.**
- **Further, the channels of the river in Assam and Bangladesh may get choked with sand and silt in the lean season making navigation difficult and affecting livelihoods related to fishing,”**

# Topic-Sonoluminescence



- **When two German engineers were studying sonar — the use of sound to navigate, like bats — in 1934, they stumbled upon a strange phenomenon: when a small bubble trapped in a liquid is hit by powerful sound waves, it seems to produce a flash of light.**
- **The cause turned out to be straightforward, if also fascinating: the alternating high- and low-pressure phases of sound waves caused the bubble to expand and collapse rapidly.**
- **During the collapse, the bubble compressed so intensely that the temperature inside soared to several thousand kelvin.**
- **The extreme temperature caused gases within the bubble to ionise and release light energy in about a trillionth of a second.**

- **Sonoluminescence is not restricted to labs.**
- **Pistol shrimp (family Alpheidae) possess a specialised claw that it can snap shut with incredible speed.**
- **The result is a jet of water moving so fast that it creates a low-pressure bubble in the water**

# Topic- Why Volcanic Eruption in Iceland?

## Key Reasons for Eruptions

### Tectonic Activity 🌍

Divergent plates

Mid-Atlantic Ridge

### Geothermal Activity 🔥

Magma chambers

Hot spots

### Climate Factors ☀️

Melting glaciers

Seasonal changes





## Recent Eruptions

**Eruptions occurred multiple times in 2024**  
**Spectacular lava fountains and ash clouds**

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# Effects of Eruptions

## Environmental Impact

Air quality

Lava flows affecting vegetation

## Human Impact

Evacuations

Damage to infrastructure

## Monitoring & Research

Continuous monitoring by scientists

Use of technology to predict eruptions

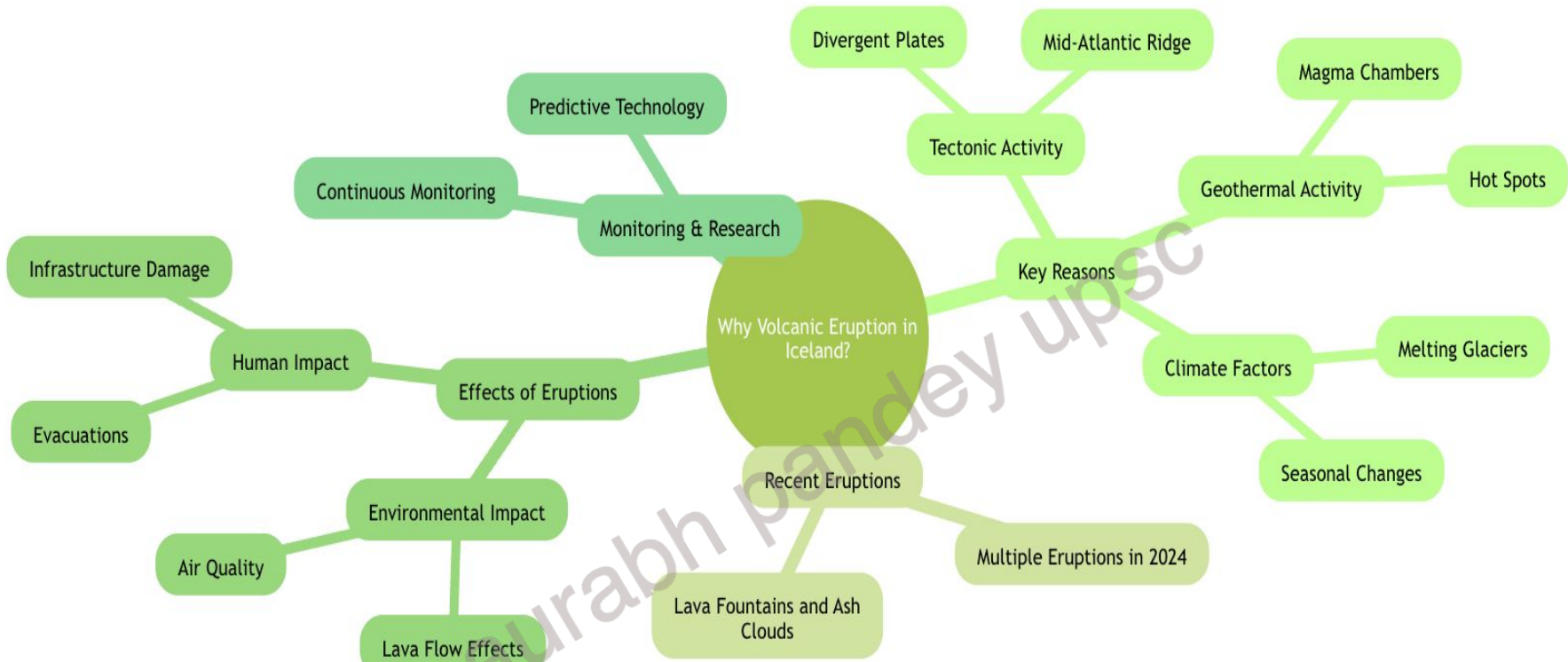


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# Topic- Hema Committee Report



## Key Points

**Background:** The Hema Committee was formed to investigate allegations of *sexual abuse* within the Malayalam film industry.

**Findings:** The report highlighted systemic issues, including *patriarchy* and *abuse of power*.

**Reactions:** Significant backlash from industry participants, with some resignations following the report's release.

**Impact:** Initiated discussions on *women's safety* and *reforms* within the film industry.

**Government Response:** Kerala government formed a special team to address the issues raised.



## Report Highlights

- **Major Resignations:** Notable figures resigned in response to the report.
- **Cultural Reflection:** The report serves as a wake-up call for the entire nation regarding women's rights and safety.
- **Future Actions:** Calls for reforms and increased accountability in the industry



- **It was released last week, several paragraphs redacted, and contains unsurprising and yet disturbing revelations about the state of affairs in the film industry – discrimination, exploitation and sexual harassment of women.**
- **. Justice Hema points out that making the exchange of sexual favours the passkey for entry into the field itself, and normalising it and conflating it with consensual sexual activity, makes the industry inherently exploitative.**



- **The report deals also with other inequities that disadvantage women in the industry, including the lack of essential facilities such as toilets, changing rooms, safe transportation, and accommodation at the shooting spot which are violative of the right to privacy; and discrimination in remuneration, and a lack of binding contractual agreements.**
- **These affect the range of women across the industry – actors, technicians, make-up artists, dancers, support staff, and particularly so, women lower in the pecking order.**

# Topic- Justice verma committee / death penalty for rape



- **Key amendments were brought in to provide the death penalty for rape that led to death of the victim or reduced her to a persistent vegetative state (Section 376A of the Indian Penal Code) and anyone found guilty of rape more than once (Section 376E).**
- **In 2018, further changes introduced death as the maximum punishment for every participant in a gang rape when the victim is less than 12 years old (Section 376DB), and life-long imprisonment if the victim is less than 16 (Section 376DA).**
- **Under the new Bharatiya Nyaya Sanhita, punishment for rape is laid down in several Sections including 64, 65 and 70(2), which notes the punishment for gang rape of a woman under the age of 18 is the death penalty.**





## **What did the committee recommend?**

**The Justice Verma Committee provided for enhanced sentences for rape, increasing it from 7 years to 10 years, 20 years, and life, but “short of death”.**

**“Whoever causes the person to be in a persistent vegetative state, shall be punished with rigorous imprisonment for a term which shall not be less than twenty years, but may be for life, which shall mean the rest of that person’s natural life,”**



- **The committee pointed out that “there is considerable evidence that the deterrent effect of death penalty on serious crimes is actually a myth.**
- **According to the Working Group on Human Rights, the murder rate has declined consistently in India over the last 20 years despite the slowdown in the execution of death sentences since 1980.”**

### **What was its stance on marital rape?**

- **The Verma Committee recommended that the exception to marital rape be removed, pointing out that “a marital or other relationship between the perpetrator or victim is not a valid defence against the crimes of rape or sexual violation.”**
- **Concurring with the judgment of the European Commission of Human Rights in C.R. vs U.K., the Verma Committee endorsed the conclusion that a rapist remains a rapist regardless of his relationship with the victim.**



- **The Union government did not go by this recommendation and refused to criminalise marital rape.**
- **Under the BNS, exception 2 of Section 63 states that “sexual intercourse or acts by a man with his wife, the wife not being under 18 years of age, is not rape.” What about gender rights?**
- **The Verma Committee pointed out that “the ethos of empowerment of women does not limit itself to political equality, but also extends, in equal terms, to social, educational, and economic equality.**



- **If true empowerment of women were to mean anything, it is necessary that law, as well as public policy, must be capable of engaging substantially with women’s rights, opportunities, acquisition of skills, the ability to generate self-confidence and insist on total equality in relationships, both with society and the state.”**
- **The correction of social mindsets of its gender bias depends more on social norms, it observed, noting that “the deficiency has to be overcome by leaders in society aided by the necessary systemic changes in education and societal behaviour.**



# Mapping - Mount GAMALAMA

## Mount Gamalama

**Location:** Indonesia

**Type:** Stratovolcano

**Height:** Approximately 2,315 meters

**Significance:** One of the active volcanoes in Indonesia

## Recent Volcanic Activity

Increased eruptions and seismic activities

Affected areas and communities

Monitoring efforts by local authorities

# Topic- Lateral Entry



## What is Lateral Entry?

- **Definition and Purpose:** Lateral entry refers to the recruitment of specialists from non-governmental backgrounds into senior bureaucratic positions. It aims to infuse specialized expertise and fresh perspectives into the government machinery, addressing complex governance and policy implementation challenges.
- **Key Features:** The lateral entry policy seeks to diversify the administrative cadre by bringing in professionals with domain-specific knowledge and experience, supplementing the traditional civil services recruitment process.
- **Rationale for Implementation:** The government's decision to introduce lateral entry reflects the recognition of the need for specialized skill sets to effectively address contemporary governance and policy challenges.



## Objectives and Expectations

- **Enhancing Governance:** Lateral entry aims to enhance the efficiency and effectiveness of governance by infusing innovative ideas, best practices, and contemporary expertise into the bureaucratic framework.
- **Addressing Policy Challenges:** The policy seeks to address complex policy challenges by leveraging the expertise of professionals with diverse backgrounds, fostering a more holistic approach to decision-making.
- **Promoting Inclusivity:** Lateral entry endeavors to promote inclusivity by integrating specialized talent from various sectors, ensuring a comprehensive and multidimensional perspective in governance and public administration.

# Controversies and Criticisms

## : Reservation Quota Concerns

- **Lack of Quota Benefits:** The absence of reservation quotas in lateral entry has sparked concerns about the potential exclusion of marginalized communities from senior bureaucratic positions, raising questions about equitable representation.
- **Political and Social Backlash:** The policy has faced criticism for its perceived deviation from the principles of social justice and affirmative action, leading to contentious debates and political opposition.
- **Impact on Diversity:** The absence of reservation benefits in lateral entry has raised apprehensions about the impact on diversity and inclusivity within the administrative framework.





## Transparency and Accountability

- **Transparency in Selection:** Questions have been raised regarding the transparency of the selection process for lateral entry, with concerns about potential biases and favoritism in the recruitment of specialists from non-governmental backgrounds.
- **Accountability and Oversight:** The need for robust mechanisms to ensure accountability and oversight in the integration of lateral entrants into bureaucratic roles has been highlighted, addressing concerns about potential conflicts of interest and administrative integrity.
- **Ethical Considerations:** The ethical implications of lateral entry, particularly in terms of maintaining the integrity and impartiality of the civil services, have been subjects of intense scrutiny and debate.



## Institutional Adaptation and Integration

- **Cultural and Institutional Challenges:** The integration of lateral entrants into the bureaucratic ecosystem has raised concerns about potential cultural clashes, institutional resistance, and the adaptation of specialists to the administrative ethos.
- **Collaborative Governance:** The need for collaborative governance structures to facilitate the seamless integration of lateral entrants and traditional civil servants, fostering a harmonious and synergistic administrative environment, has been emphasized.
- **Capacity Building and Training:** The provision of specialized capacity building and training programs for lateral entrants to familiarize them with administrative processes and public service ethos has been identified as a critical requirement



## Public Perception and Trust

- **Public Confidence:** The impact of lateral entry on public confidence in the administrative machinery and the perceived trustworthiness of bureaucratic decisions has been a subject of public discourse and concern.
- **Communication and Engagement:** The need for transparent communication and public engagement regarding the objectives, processes, and outcomes of lateral entry is crucial in addressing public apprehensions and fostering understanding.
- **Rebuilding Trust:** Strategies for rebuilding public trust and confidence in the administrative framework amidst the controversies and criticisms surrounding lateral entry need to be explored and implemented.

## Prospects and Impact

### Governance and Policy Reforms

- **Innovative Policy Formulation:** The infusion of specialized expertise through lateral entry has the potential to drive innovative policy formulation, leveraging domain-specific knowledge for effective governance and public administration.
- **Administrative Efficiency:** Lateral entry can contribute to administrative efficiency by introducing contemporary best practices, strategic insights, and professional acumen into bureaucratic decision-making processes.
- **Impact on Public Services:** The prospects of lateral entry in enhancing the delivery of public services, optimizing resource allocation, and fostering responsive governance need to be evaluated and communicated.





- **Were such appointments made during the term of the previous governments?  
Former PM Manmohan Singh was inducted as Economic Adviser in the Ministry of Commerce and Industry in 1971; he served as the Chief Economic Adviser from 1972-1976; then he became the Governor of the Reserve**

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## **What is the genesis of the policy?**

**In 2017, the NITI Aayog, in a report titled ‘India-Three Year Action Agenda, 2017-18 to 2019-20,’ regarding ‘Civil Services Reform,’ suggested lateral entry inductions.**

**“Today, rising complexity of the economy has meant that policymaking is a specialised activity.**

**Therefore, it is essential that specialists be inducted into the system through lateral entry.**

**Such entry will also have the beneficial side-effect of bringing competition to the established career bureaucracy,” the report stated.**



- **The advisory body said government officers may be encouraged to gain expertise in specific areas and the current system of rapid rotation of officers may be replaced by a system of longer postings according to specialisation.**
- **It added, “Such a system will bring top talent and energy into the government and will lend new dynamism to the ministries.”**



- **For tax reforms, NITI Ayog recommended that the tax boards be given considerable flexibility to bring outside technical staff laterally to utilise the available information to ensure tax compliance.**
- **On February 10, 2021, the PM criticised the work culture of IAS officers, questioning what objectives could be achieved by surrendering the country to “babus.”**
- **Under the Congress-led UPA government in 2005, the second Administrative Reforms Commission also recommended lateral entry into government service.**





## **Topic- Why is sanction required to prosecute a public servant?**

- **Sanction for prosecuting a public servant has been a mandatory feature of anti-corruption law.**
- **This is intended to protect public servants from vexatious and malicious prosecution for actions and decisions made in the course of discharging their official duties.**
- **Section 197 of the Code of Criminal Procedure Code (CrPC) said no court could take cognisance of a case against a public servant unless an authority competent to remove that person grants sanction.**
- **Section 197 spoke of anyone who 'is or was' a public servant. Section 6 of the Prevention of Corruption Act, 1947, has a similar provision.**
- **However, the sanction requirement was limited to the period when the public servant was in office, and, no sanction was necessary if the person no more held that office.**



**Under both the CrPC and the Prevention of Corruption Act (PCA), the State and Central governments had the authority to sanction prosecution of their respective employees. The provision was preserved in Section 19 of the PCA, 1988.**

**What are the latest provisions on granting sanction?**

**Section 218 of the Bharatiya Nagarik Suraksha Sanhita (BNSS), the procedure code that has replaced the CrPC, retains the sanction provisions.**

**When the PCA was amended in 2018, a new provision was introduced under which the government's approval is required, even to begin an investigation.**

- **While under Section 17A, the appropriate authority's approval is necessary to begin an investigation, the provision for sanction under Section 19 is a pre-requisite for any court to take cognisance of a charge sheet or complaint of corruption.**
- **Another feature of the 2018 amendment is that it applies to those who are and were public servants.**



## **What is the Governor's role in a case against a CM?**

**Provisions relating to sanction in the CrPC generally spoke of the State government and the Central government as the authority to grant sanctions for those employed by their respective governments.**

**However, both the 1947 and 1988 versions of the PCA have a clause stating that in the case of “any other person”, the sanction would be granted by the authority competent to remove the public servant in office.**

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- **As the power the Governor is vested with the power to dismiss a CM, the Governor is seen as the authority to consider granting sanction for prosecuting a CM.**
- **Questions have often arisen as to whether the Governor exercises his discretion while considering sanction, or he is bound to act on the aid and advice of the Council of Ministers.**



- **In the case of A. R. Antulay, the Supreme Court held that the Governor should act in his discretion: “... We have no doubt in our mind that when there is to be a prosecution of the Chief Minister, the Governor would, while determining whether sanction for such prosecution should be granted or not under s. 6 of the Prevention of Corruption Act, as a matter of propriety, necessarily act in his discretion and not on the advice of the Council of Ministers.**

- . In **Madhya Pradesh Special Police Establishment vs. State of MP and others (2004)**, the Supreme Court found the Council’s decision “irrational” and upheld the Governor’s action.
- It said: “... on those rare occasions where on facts, the bias becomes apparent and/or the decision of Council of Ministers is shown to be irrational and based on non-consideration of relevant factors, the Governor would be right, ... to act in his own discretion and grant sanction”



## **Topic- humpback whales & 'bubble-nets'**

- **Researchers have now found that humpback whales do not just create the 'bubble-nets' but they manipulate this unique tool in a variety of ways to maximise their food intake in Alaskan feeding grounds.**
- **The humpback whales skillfully blow bubbles in patterns that form nets with internal rings, actively controlling details like the number of rings, the size and depth of the net, and the spacing between bubbles.**
- **This method lets them capture up to seven times more prey in a single feeding dive without using extra energy**





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# Topic- **Arabidopsis thaliana**

- **Scientists have found that developmental change from the vegetative to reproductive transition happens over a few days.**
- **During the transition, plants slow down the leaf growth and instead develop reproductive organs.**
- **This transition starts the process of nutrients in the leaves being diverted into the reproductive organs of the plant and their fruits and grains**

**Arabidopsis thaliana is a small flowering plant related to cabbage and mustard**



# Topic- Anosmia

- Anosmia is the **partial or full loss of smell.**
- Anosmia can be a temporary or permanent condition.
- You can partially or completely lose your sense of smell when the mucus membranes in your nose are irritated or obstructed such as when you have a severe cold or a sinus infection

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# India has no locally developed tests for Zika virus

Zika virus outbreaks across India are occurring with increasing regularity

Labs in India have access to only conventional RT-PCR and Elisa for testing Zika virus, which are not highly reliable

As of February 16, 2023, no kit for Zika virus testing has been approved by the Indian drug regulator



NIV has been using Trioplex RT-PCR test kit developed by the Atlanta-based CDC for Zika virus testing since 2016



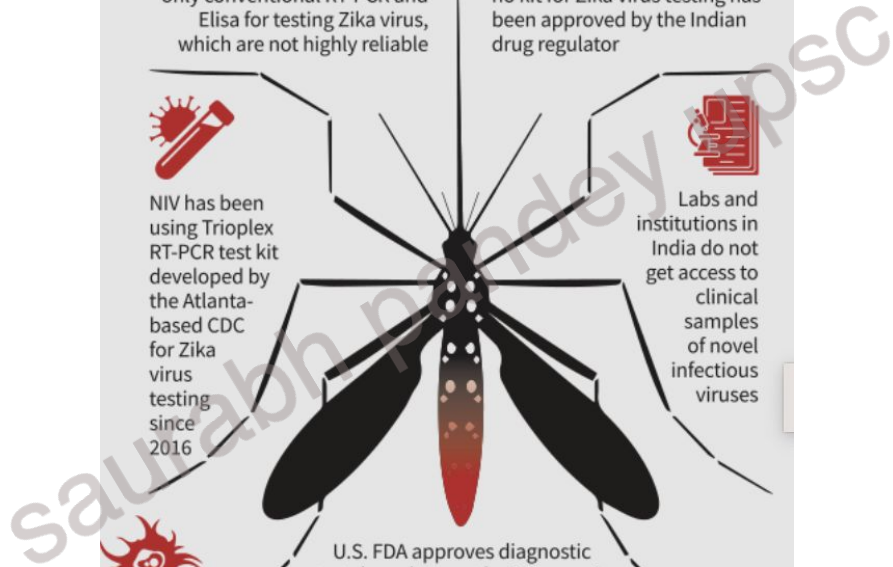
Labs and institutions in India do not get access to clinical samples of novel infectious viruses



U.S. FDA approves diagnostic tests based on synthetic genomic fragments, while the Indian drug regulator insists on validation using clinical samples

The Thiruvananthapuram-based Institute of Advanced Virology has developed an assay for testing Zika virus and validated it using multiple methods

In the absence of wide availability of Zika tests, timely detection and control of outbreaks is a challenge





## Topic - Overview of RTPCR

**Definition: Reverse Transcription Polymerase Chain Reaction**

**Purpose: Detects RNA viruses like SARS-CoV-2**

**Importance: Key in COVID-19 diagnostics**

[RNA] [Enzyme] [Primers] [ThermalCycling]

### Key Aspects:

**RNA Extraction: Isolate RNA from samples.**

**Reverse Transcription: Convert RNA to complementary DNA (cDNA).**

**Amplification: Use PCR to amplify cDNA for detection.**



## Applications of RTPCR

**COVID-19 Testing: Main method for diagnosing SARS-CoV-2.**

**Research: Used in genetic research and pathogen detection.**

**Public Health: Monitor virus spread and variant identification.**

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