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THE HINDU ANALYSIS MAINS PRACTICE QUESTION

27 APRIL 2025



INDIA AI MISSION



SARVAM AI –HOMEGROWN AI

Centre selects start-up Sarvam to build first homegrown AI model

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NEW DELHI, APRIL 26

THE GOVERNMENT has selected Bengaluru-based start-up Sarvam to build the country's first indigenous artificial intelligence (AI) large language model (LLM) amid waves made by China's low cost model DeepSeek. The start-up, chosen from among 67 applicants, will receive support from the government in terms of compute resources to build the model from scratch.

Sarvam is the first start-up to get approved for sops under India's ambitious Rs 10,370 crore IndiaAI Mission to build a model, with the government currently

assessing hundreds of other proposals. Sarvam said its model will be capable of reasoning, designed for voice, and fluent in Indian languages, and it will be ready for population-scale deployment.

A senior official said in terms of government support, the company will receive access to 4,000 graphics processing units (GPUs) for six months for the company to build and train its model. The model is not expected to be open-sourced, but will be fine-tuned particularly for Indian languages. The GPUs will be provided to Sarvam by companies separately selected by the government to set up AI data centres

CONTINUED ON PAGE 2

- ❑ The government has selected Bengaluru-based start-up Sarvam to build the country's first indigenous artificial intelligence (AI) large language model (LLM) amid waves made by China's low cost model DeepSeek.
- ❑ Introduction In a landmark move to bolster India's strategic autonomy in artificial intelligence (AI).
- ❑ The project, undertaken under the government's ambitious ₹10,370 crore IndiaAI Mission, aims to create a robust AI infrastructure fully developed, deployed, and optimized within India.
- ❑ This development marks a critical step toward ensuring India's leadership in the AI domain and promoting domestic innovation through indigenous capabilities.

About the Sarvam AI Model Initiative

- ❑ The **government chose Sarvam** after a rigorous selection process involving 67 applicants.
- ❑ The **start-up will receive extensive support**, including access to 4,000 high-end GPUs for six months to build the model from scratch.
- ❑ The GPUs will be provided through companies such as **Yotta Data Services, Tata Communications, and E2E Networks**, which were separately empanelled to create AI data centres in India.
- ❑ The model, to be **built entirely using local talent and infrastructure**, will have 70 billion parameters, positioning it to compete with some of the best global AI models.
- ❑ According to Sarvam, the **LLM will focus on advanced reasoning, voice-based tasks, and fluency** in Indian languages, making it uniquely suited for India's diverse population.

Why Sarvam AI

Sarvam AI had recently announced it has raised \$41 million to build generative AI offerings for India's unique needs - including support for diverse Indian languages, voice-first interfaces, all intended to create population-scale impact.

Sarvam AI's large Indic language models with voice interfaces, will make it easy for Indians to interact with

their model. It is also building an enterprise-grade platform that helps companies to build genAI applications at scale on their platform. As for the ecosystem development, they are passionate about contributing to open-source models and datasets, and lead efforts for large scale data curation in the public-good space.

Strategic Significance of the Project

- ❑ This initiative goes beyond technological advancement; it is a **strategic move to establish critical national AI infrastructure**.
- ❑ The company emphasized that the goal is to create **multi-modal, multi-scale foundation models** that are not just functional but deeply integrated with Indian languages and societal needs.
- ❑ For citizens, this means **AI systems that feel familiar and culturally relevant**.
- ❑ For enterprises, it **unlocks the potential to harness AI capabilities** without concerns over data sovereignty, as all processes will remain within India's borders.

Snapshot

Company: Axonwise Pvt Ltd
(Sarvam AI)

Founded: Bengaluru,
July 2023

Founders: Vivek Raghavan,
Pratyush Kumar

Core business: Generative
AI technologies focussed
on India

Team: 40

Funding: **\$53 million**

Investors include: Lightspeed
Venture Partners, Peak XV
Partners, Khosla Ventures, Venture
Highway

Commercialisation: Early-stage
startup, with first 'full-stack'
voice-based **agentic AI products**
released that support **10 Indian
languages** currently, and being
evaluated by **potential large
enterprise customers**

What's noteworthy: India's first
language model built from scratch
completely in-house, called
Sarvam 2B

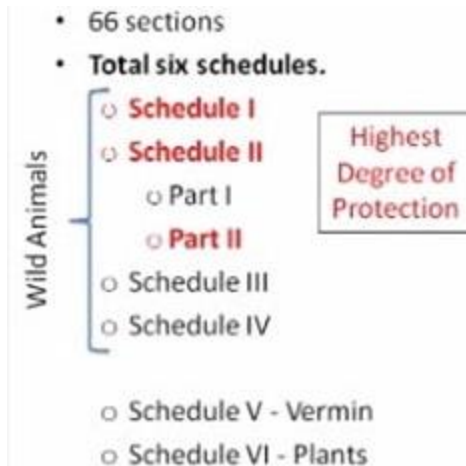


Grizzled Giant Squirrel

- ❑ The Villupuram Forest Division is initiating a population study of the grizzled giant squirrel in the **Pakkamalai and Gangavaram hills**.
- ❑ The study aims to gather baseline data to formulate effective conservation strategies.
- ❑ The grizzled giant squirrel, listed under **Schedule I of the Wildlife Protection Act, 1972**, is known for its unique habitat preferences and ecological role.

Species Overview

- ❑ The grizzled giant squirrel (*Ratufa macroura*) is the **smallest member of the giant squirrel family**.
- ❑ It inhabits riparian forests in **Southern India and Sri Lanka**.



- ❑ Its **distinctive greyish-brown body** features white flecks, giving it a 'grizzled' appearance.
- ❑ These squirrels are **primarily arboreal** and are **most active during dawn and dusk**.

Habitat and Distribution

- ❑ Grizzled giant squirrels are typically found in **fragmented populations** across Southern India.
- ❑ They thrive in the **Western Ghats**, with notable populations in the **Chinnar Wildlife Sanctuary and the Anamalai Tiger Reserve**.
- ❑ Their habitat consists of **dense forests near rivers**, which provide essential resources for foraging and nesting.

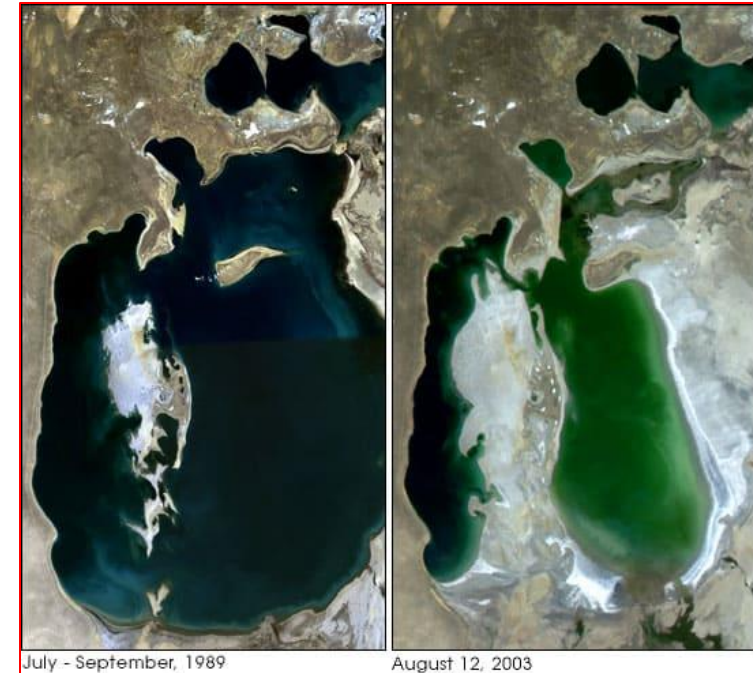
Schedule I and part II of schedule II	Animals which are in the category of endangered species . These are given absolute protection from hunting . Eg Tiger
Schedule III and IV	These also have roughly the same provisions of Section I and II, but cover animals that are not in danger of becoming extinct.
Schedule V	Delineates animals that can be hunted like ducks and deers with the prior permission of chief wildlife warden . (Vermis)
Schedule VI	Concerns cultivation and plant life and gives teeth to setting up more protected animal parks.

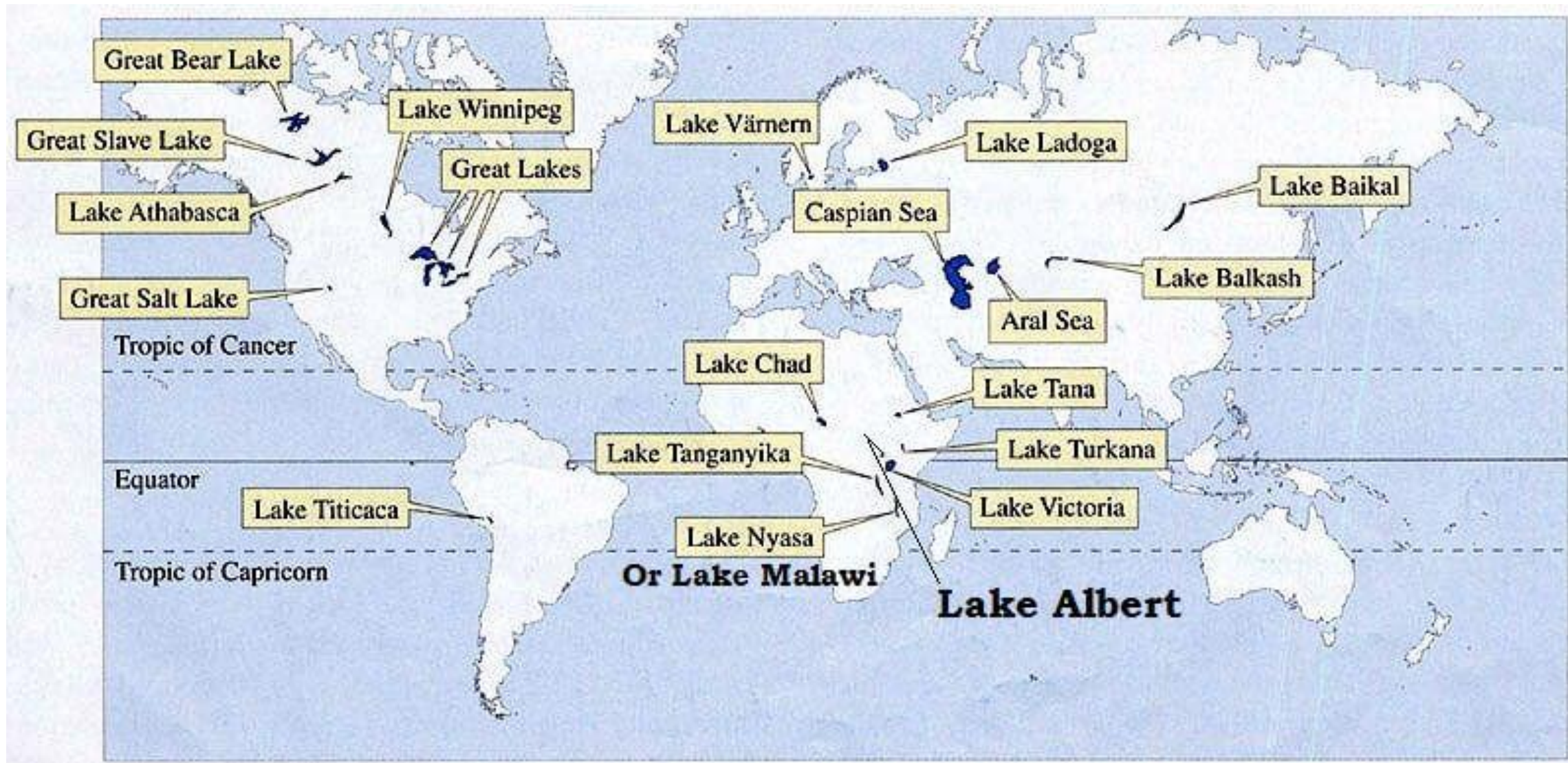
ARAL SEA

- ❑ The Aral Sea, once a vast body of water, has undergone geological changes following its dramatic shrinkage.
- ❑ This transformation began in the 1960s due to human interventions in river systems.
- ❑ Geological Changes in the Aral Sea Basin
 - ❑ Recent research indicates that the land surrounding the Aral Sea is experiencing upward movement.
 - ❑ This phenomenon is linked to the loss of water weight from the lake.
 - ❑ The Soviet-era diversion of rivers led to a decrease in water levels, causing the Earth's crust to slowly rise.
 - ❑ Satellite technology has been used to monitor this elevation, showing an increase of about 1.6 inches between 2016 and 2020.



- ❑ The drying of the Aral Sea has resulted in the formation of the **Aralkum Desert**, which has become source of dust.
- ❑ Studies show that **dust emissions** from this area nearly doubled from 1985 to 2015.
- ❑ Contaminated dust from the region is now spreading to nearby countries, **affecting air quality and public health**.
- ❑ The **Aral Sea's decline** serves as a stark reminder of the impact of human actions on the environment.
- ❑ The **changes in land elevation and atmospheric conditions** highlight the interconnectedness of human activity and geological processes.
- ❑ Similar situations, such as the drying of **Lake Urmia in Iran**, indicate broader environmental concerns that require ongoing **scientific investigation**.





Great Bear Lake

Great Slave Lake

Lake Athabasca

Great Salt Lake

Tropic of Cancer

Equator

Lake Titicaca

Tropic of Capricorn

Lake Winnipeg

Great Lakes

Lake Värnern

Lake Ladoga

Caspian Sea

Lake Baikal

Lake Balkash

Aral Sea

Lake Chad

Lake Tana

Lake Tanganyika

Lake Turkana

Lake Victoria

Lake Nyasa

Or Lake Malawi

Lake Albert

BRICS LAND RESTORATION PARTNERSHIP

- ❑ Recently, BRICS nations introduced the “**BRICS Land Restoration Partnership**” during the 15th BRICS Agriculture Ministers’ meeting in Brasilia, Brazil.
- ❑ This initiative **aims to tackle land degradation, desertification**, and soil fertility loss across its 11 member countries.
- ❑ The partnership puts stress on a collective commitment to reforming the **global agri-food system to be fair, inclusive**, innovative, and sustainable.
- ❑ BRICS is an acronym for **Brazil, Russia, China, and South Africa**.
- ❑ Initially formed in 2001, it expanded to include six new members – **Egypt, Ethiopia, UAE, Iran, Indonesia, and Saudi Arabia**.

Objectives

- Increase influence of emerging economies in global politics.
- Challenge dominance of Western nations in IMF and World Bank.
- Greater voice and representation for emerging economies.

According to the World Bank Data (2019), BRICS (**5 countries**) comprises

1. **41% of the world population,**
2. **24% of the world GDP,**
3. **Over 16% share in the world trade**
4. **29.3% of total land surface.**

Contingent Reserve Arrangement (CRA)

The CRA is an agreement among the BRICS' central banks for mutual support during a sudden currency crisis.

New Development Bank (NDB)

USD 100 Billion

Authorized Capital of NDB



Headquarters
Shanghai, China.

The New Development Bank was created to meet the development funding requirements of the five founding countries namely Brazil, Russia, India, China & South Africa (BRICS) and other emerging economies and developing countries as well.

LUCY MISSION NASA

- ❑ The Lucy spacecraft is set to make flyby of the asteroid **Donaldjohanson**.
- ❑ Located 139 million miles from Earth, **Donaldjohanson** resides in the **asteroid belt between Mars and Jupiter**.
- ❑ This flyby will enable Lucy to gather vital data about the asteroid's size and shape.
- ❑ Lucy Mission
- ❑ Lucy is a **NASA space probe launched in 2021**.
- ❑ Its primary mission is to **study primitive asteroids** that have existed since the solar system's formation.
- ❑ These **celestial bodies serve as time capsules**, offering vital information about the early conditions that led to the formation of planets.



LUCY MISSION

Studying Trojan Asteroids of Jupiter

7 CELESTIAL BODIES INTERCEPTED

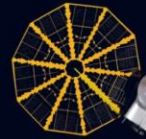
1. Donaldjohanson
2. Eurybates
3. Polymele
4. Leucus
5. Orus
6. Patroclus
7. Menoetius

REPEAT EVERY 12 YEARS

Earth Gravity Assists

No other mission has been launched to as many different destinations in independent orbits around the Sun

L4 Trojan asteroids



Various Space Missions



Organisation/ Country	Missions
NASA	Parker, MUSE and HelioSwarm, Heliophysics, Solar Orbiter (With ESA)
ISRO	Aditya-L1

Planet	Organisation/ Country	Missions
Mercury	NASA	Messenger
	ESA	BepiColombo
Venus	NASA	Magellan, DAVINCI+, VERITAS
	ISRO	Shukrayaan
	ESA	EnVision, Venus Express
Mars	NASA	InSight, Odyssey, Pathfinder, MAVEN, Viking, Perseverance
	ISRO	Mangalyaan
	CHINA	Tianwen-1
	UAE	Hope
Jupiter	ESA	ExoMars, Mars Express
	NASA	Voyager 1, Voyager 2, Juno, Europa Clipper
	ESA	Juice
Saturn	NASA	Voyager 1, Voyager 2, CASSINI
	ESA	Huygens
Uranus	NASA	Voyager 2
Neptune	NASA	Voyager 2

STANDING DEPOSIT FACILITY

- ❑ The **Standing Deposit Facility (SDF)** has become important tool for the **Reserve Bank of India (RBI)** in managing liquidity in the banking system.
- ❑ Introduced on April 8, 2022, the **SDF allows banks to deposit surplus funds** with the RBI without needing to provide collateral in return.
- ❑ This mechanism has evolved to address the challenges faced during periods of **high liquidity and has shown increase** in usage in recent months.
- ❑ The SDF serves as a **liquidity absorption tool**.
- ❑ This allows **banks to park excess funds** with the RBI while earning interest.

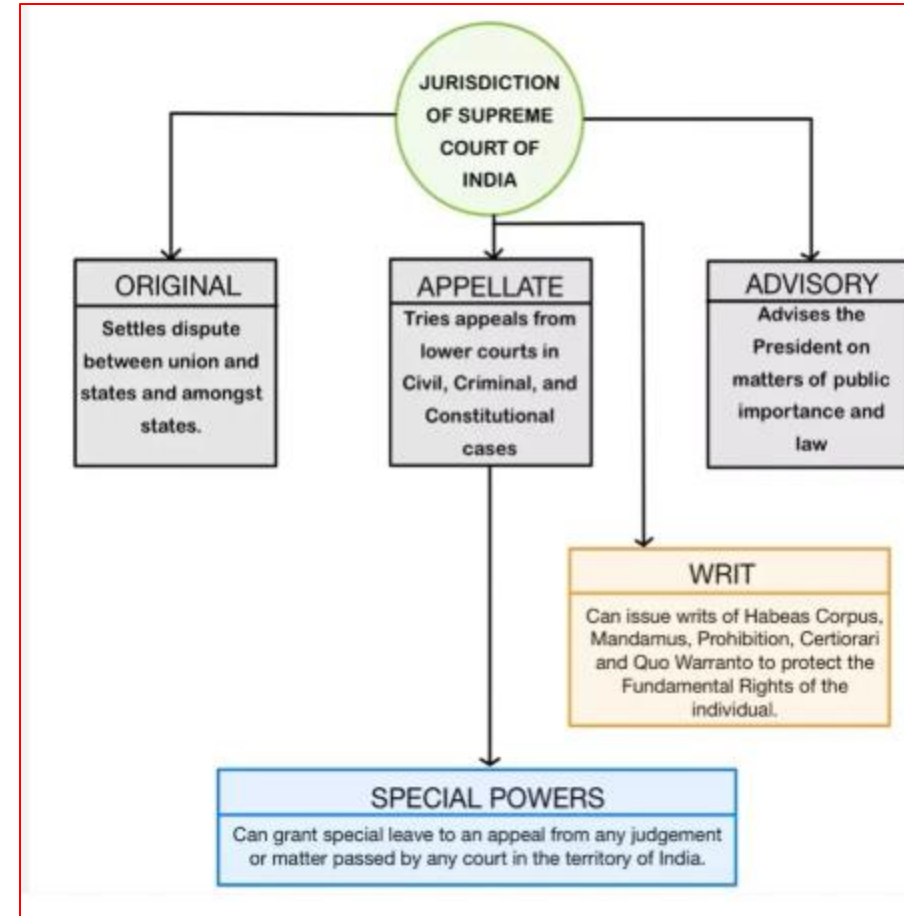


DOCTRINE OF PROSPECTIVE OVERRULING

The Supreme Court of India recently clarified the **application of the doctrine of prospective overruling**.

Doctrine of Prospective Overruling

1. The doctrine of prospective overruling allows a court to declare that a new legal principle applies only to future cases.
2. This is done to **avoid injustice or confusion** that may result from sudden legal changes.
3. It helps **ensure smooth legal transitions** by protecting actions done under the old rule.
4. The doctrine came from **U.S. courts and was adopted in India**.
5. First used in India in the case **Golak Nath v. State of Punjab (1967)**



Use Cases

- ❑ Used only in **constitutional cases**.
- ❑ Can be applied only by the Supreme Court.
- ❑ Past actions under old law are not disturbed.
- ❑ **Prevents reopening old cases** and unnecessary litigation.
- ❑ Gives time to **adjust to the new rule**.
- ❑ Landmark Cases **Golak Nath v. State of Punjab (1967)** First time the doctrine was used in India.
- ❑ Court said Parliament cannot change **fundamental rights**. But to avoid confusion, this rule applied only to future cases.

An unfettered power

In calling for a joint trial of separate cases in the Babri Masjid issue, the Supreme Court used its extraordinary powers under Art. 142

Article 142: The Supreme Court may pass such decree or order as is necessary for doing complete justice in any cause or matter pending before it

- The recent highway liquor ban was imposed by the Supreme Court under Article 142
- In 2011, a bench of Justice A.K. Ganguly and Justice Deepak Verma had said on Article 142: "...no fetter is imposed on the court's jurisdiction except of course any express provision of the

law to the contrary"

Two sets: There were two sets of cases relating to the demolition of the disputed structure on December 6, 1992

- The first involved unnamed 'karsevaks', whose trial is taking place in a Lucknow court
- The second set of cases in a Rae Bareilly court relates to the VVIPs accused of "inflammatory speeches", in which the CBI is pressing for restoration of "conspiracy" charge against the accused



River Cities Alliance

River Cities Alliance

- ❑ The River Cities Alliance (RCA) is initiative aimed at promoting sustainable urban river management in India.
- ❑ Established in 2021, it is a collaborative effort by the Ministry of Jal Shakti and the Ministry of Housing and Urban Affairs.
- ❑ The RCA currently comprises 145 cities, focusing on integrating river-sensitive urban planning into urban development.





Objectives of RCA

- ❑ The RCA's primary goal is to encourage sustainable river-centric development.
 - ❑ It aims to enhance knowledge exchange among member cities.
- The initiative promotes best practices in urban river management.





Context: The National Mission for Clean Ganga (NMCG) launched the Global River Cities Alliance (GRCA) at COP28 in Dubai, UAE.

Aspects	Description
About GRCA 	The Global River Cities Alliance (GRCA) was launched at COP28 (UNFCCC), led by India's National Mission for Clean Ganga .
	The alliance has been expanded from River Cities Alliance (RCA) with 143 member cities in India to membership of 267 global river-cities including USA and Denmark
Coverage 	Covering 275+ river-cities in 11 countries (first-of-its-kind global alliance) it focuses on river conservation and sustainable water management.
Lead Organization 	Secretarial role by National Mission for Clean Ganga (NMCG) , Ministry of Jal Shakti and National Institute for Urban Affairs (NIUA) under Ministry of Housing and Urban Affairs (MoHUA).
Key Participating Countries	India, Egypt, Netherlands, Denmark, Ghana, Australia, Bhutan, Cambodia, Japan
Participating River-Cities	The Hague (Den Haag), Adelaide, Szolnok, among others
International Funding Agencies	World Bank, Asian Development Bank (ADB), Asian Infrastructure Investment Bank (AIIB)
Vision and Integration	Globalizing river-centric development , integrating urban water management into urban planning
Collaboration	Acknowledged collaboration between Namami Gange and Mississippi River Cities and Towns Initiative (MRCTI)
Significance 	Enhancing river basin cities for better river health and liveability. Implementing sustainable urban river management . Urban River Management Plans
About River Cities Alliance (RCA)	RCA was established in 2021 by NMCG in joint collaboration with MoJS & MoHUA. It aims to connect river cities and focus on sustainable river centric development



Thank you

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