

OCTOBER

21

CRUX 10

10 News. 10 Sources. One Place



MK Yadav Sir



The Indian **EXPRESS** live **mint** पॉइंट

DownToEarth
FORTNIGHTLY ON POLITICS OF DEVELOPMENT,
ENVIRONMENT AND HEALTH

**Science
Reporter**



विज्ञान एवं
प्रौद्योगिकी मंत्रालय
MINISTRY OF
SCIENCE AND
TECHNOLOGY

Table of Contents

- 1 Ek Bharat Shreshtha Bharat
- 2 Public Private Partnership
- 3 Chandrayaan-3 Mission
- 4 National Curriculum Framework
- 5 AFSPA
- 6 Competition Commission Of India
- 7 Life-Lifestyle For Environment
- 8 Single-Use Plastic
- 9 Conservation Of Vultures
- 10 Black Hole

Centre launches programme to strengthen Kashi-T.N. bond

The programme will be held as part of the 'Ek Bharat Shreshtha Bharat' initiative and is aimed at rekindling the civilisational link between the two places, says Minister Dharmendra Pradhan

The Hindu Bureau
NEW DELHI

Amid the continued debates over imposition of Hindi across the country, the Union government on Thursday announced a month-long programme to "strengthen" and "rekindle" the cultural and civilisational bond between Tamil Nadu and Varanasi. Named the 'Kashi-Tamil Sangamam', the programme would be held from November 16 to December 16.

"The period will cover the Tamil month of Karthika during which all Tamil households go pray to Lord Shiva. This programme, which would be a part of the 'Ek Bharat Shreshtha Bharat' initiative, is aimed at rekindling the civilisational link between the new Kashi and Tamil Nadu – both deep centres of knowledge," Union Education Minister Dharmendra Pradhan said. He added that building a heritage bridge for the new



Holy site: The programme will include visits to the Kashi Vishwanath Temple in Varanasi. FILE PHOTO

generation was a key feature of the National Education Policy.

As part of the programme, 2,500 people divided into 12 groups would be travelling to Varanasi by train during the period. The journey points in Tamil Nadu would be Chennai, Rameswaram and Coimbatore. The groups would include students, teachers, artisans and people from various walks of life.

"It would be an eight-

day tour package," the Minister said after launching the online registration for the tours. Mr. Pradhan said the tours would include seminars, lectures, group meetings and visits to the Kashi Vishwanath temple and centres of important Tamil cultural heritage in Varanasi.

The Centre's decision comes at a time the Tamil Nadu government has moved a resolution against 'Hindi imposition' in the State Assembly.

Chief Minister M.K. Stalin had earlier written to Prime Minister Narendra Modi against "continuous efforts to promote Hindi in the name of one nation".

Denying any link between the Hindi debate and the launch of this programme, Mr. Pradhan said, "This is not a reactionary programme. We had been trying to launch this for the past six months". "The Prime Minister has earlier said that all languages are national languages and no language will be imposed on the other."

"The Home Minister has also said that in Hindi-speaking areas it should be the link language and in other areas, the local languages should be the link language. This is our policy, all regional languages are national languages," the Minister added.

The knowledge partners for the programme would be IIT-Madras and the Banaras Hindu University, while the Uttar Pradesh government would be the host State.

Context: The Union government announced a month-long programme, 'Kashi-Tamil Sangamam', to "strengthen" and "rekindle" the cultural and civilisational bond between Tamil Nadu and Varanasi.

Ek Bharat Shreshtha Bharat

- **Launch:** It was announced by Prime Minister on 31st October, 2015 on the occasion of the 140th birth anniversary of Sardar Vallabhbhai Patel.
- **Nodal Ministry:** Ministry of Education.
- **Features:** All States and UTs will be covered under the programme.
 - There will be pairing of States/UTs at national level and these pairings will be in effect for one year, or till the next round of pairings.
 - The State/UT level pairings would be utilized for state level activities.
 - District level pairings would be independent of the State level pairings.
- **The broad objectives of the initiative are as follows:**
 - **Celebration:** to celebrate the unity in diversity of our nation and to maintain and strengthen the fabric of traditionally existing emotional bonds between the people of our country.
 - **Promotion:** promote the spirit of national integration through a deep and structured engagement between all Indian states and union territories through a year-long planned engagement between states.
 - **Showcase:** to showcase the rich heritage and culture, customs and traditions of either state for enabling people to understand and appreciate the diversity that is India, thus fostering a sense of common identity.
 - **Shared practices:** to create an environment which promotes learning between states by sharing best practices and experiences.

CHHATTISGARH

Colleges to come up in remote areas under PPP

R KRISHNA DAS
Raipur, 20 October

The Chhattisgarh government will run colleges in backward areas and places difficult to access, under the public-private partnership (PPP) model.

The Cabinet has passed a proposal on this. Officials in the higher education department said the move was part of a number of innovations taken up by the Bhupesh Baghel government in education.

"Opening colleges on the PPP model in Chhattisgarh is an innovation for the state because no such scheme has been implemented in the past. None of the existing private colleges is operating under the arrangement provisioned in the proposed scheme," an official said.

Under the Madhya Pradesh Private Colleges and Institutions (Establishment and Regulation) Act, 12 private colleges in the state are being run under 100 per cent regular grants. After the formation of Chhattisgarh, 50 per cent funding is being provided to four private colleges under the Chhattisgarh Non-Government Colleges and Institutions (Establishment and Regulation) Act, 2006, with the approval of the Cabinet.

Besides, once in three years an ad hoc grant is given for building an extension, furniture, and equipment up to a maximum of ₹500,000. Under the proposed



plan, the state government will grant a maximum subsidy of ₹2.50 crore and ₹1.75 crore for establishing colleges in backward areas and those with difficult terrain, respectively, on the PPP model. This subsidy will be provided on the fixed capital investment to be given to colleges.

According to officials, the state government will provide at least 10 acres on a 30-year lease at a concessional rate of 50 per cent. The land should not be used for anything other than academic purposes. At the end of the term, the lease can be extended with the consent of both the parties. The government will pay 50 per cent of the interest on the maximum loan of ₹500 crore taken for infrastructure construction.

The state will give scholarships to students studying all the courses.

Context: The Chhattisgarh government will run colleges in backward areas and places difficult to access, under the public-private partnership (PPP) model.

Public Private Partnership (PPP)

- **About:** A public-private partnership (PPP, 3P, or P3) is a **cooperative arrangement between two or more public and private sectors**, typically of a long-term nature.
 - In this type of partnership, **investments are undertaken by the private sector entity**, for a specified period of time.
- **Models of Public Private Partnership (PPP):** The Government of India recognizes several types of PPPs, including Build-Operate-Transfer (BOT), Build-Own-Operate (BOO), Build-Operate-Lease-Transfer (BOLT), Design-Build-Operate-Transfer (DBFOT), Lease-Develop-Operate (LDO), Operate-Maintain-Transfer (OMT), etc.
 - **BOT:** It is **conventional PPP model in which private partner is responsible to design, build, operate** (during the contracted period) and transfer back the facility to the public sector.
 - **BOO:** Ownership of the newly built facility will rest with the private party.
 - **BOOT:** After the negotiated period of time, project is transferred to the government or to the private operator.
 - **BOLT:** The government gives a **concession to a private entity to build a facility** (and possibly design it as well), own the facility, lease the facility to the public sector and then at the end of the lease period transfer the ownership of the facility to the government.
 - **DBFO:** **Entire responsibility** for the design, construction, finance, and operation of the project for the period of concession lies **with the private party**.
 - **LDO:** **Either the government or the public sector entity retains ownership** of the newly created infrastructure facility and receives payments in terms of a lease agreement with the private promoter.

Chandrayaan-3 launch in June: ISRO chief

PRESS TRUST OF INDIA
NEW DELHI, OCTOBER 20



ISRO chief
S Somanath

THE INDIAN Space Research Organisation plans to launch Chandrayaan-3, its third mission to the moon, in June next year with a more robust lunar rover onboard, which is crucial for future inter-planetary explorations. The space agency has also lined up the first test flight of the 'abort mission' for Gaganyaan, the country's first human spaceflight, early next year.

"Chandrayaan-3 (C-3) launch

will be in June next year onboard the Launch Vehicle Mark-3 (LVM3)," said ISRO chairman S Somanath while interacting with media personnel on the sidelines of an event here. He said the ISRO plans to fly Indian astronauts into orbit by the end of 2024 after carrying out successful abort missions and un-

crewed test flights.

India's maiden attempt to land a rover on the moon ended in failure after the Vikram lander onboard the Chandrayaan-2 mission crashed on the surface of the moon in September 2019.

"C-3 is ready now. It is not a replica of C-2. The rover is there. The engineering is significantly different. We have made it more robust so that it does not have problems like last time," Somanath said. "There are many changes... In case something fails, something else will take over," he added.

Context: The Indian Space Research Organisation planned to launch its third mission to the moon, Chandrayaan-3, in June 2023.

Chandrayaan-3 Mission

- **About:** It is a follow-up of Chandrayaan-2 of July 2019, which aimed to land a rover on the lunar South Pole.
- **Lunar Polar Exploration Mission:** The subsequent failure of the Vikram lander led to the pursuit of another mission to demonstrate the landing capabilities needed for the **Lunar Polar Exploration Mission proposed in partnership with Japan for 2024.**
- **Features:** It will have an orbiter and a landing module.
 - This orbiter won't be loaded with scientific instruments like the Chandrayaan-2.
- **Function:** Its job will **only be confined to carry the lander to the moon**, oversee the landing from its orbit and communicate between the lander and the earth station."

Chandrayaan-2 Mission

- **About:** The second lunar exploration mission developed by the Indian Space Research Organisation (ISRO), after Chandrayaan-1.
 - It was ISRO's **first attempt to land on any extraterrestrial surface.**
- **Composition:** consisted of an Orbiter, Lander and Rover, all equipped with scientific instruments to study the moon.
 - ISRO had **named the Lander module as Vikram, after Vikram Sarabhai**, the pioneer of India's space programme, and the **Rover module as Pragyaan, meaning wisdom.**
- **Function:** The Orbiter **would watch the moon from a 100-km orbit**, while the Lander and Rover modules were to be separated to make a soft landing on the moon's surface.
- **Launch Vehicle:** It was sent aboard the country's most powerful **geosynchronous launch vehicle**, the **GSLV-Mk 3.**
- **Crash-landing:** Lander Vikram, **instead of a controlled landing, ended up crash-landing** and prevented rover Pragyaan from successfully travelling on the surface of the moon.

Chandrayaan-1

- **About:** India's first mission to the moon, was launched by the Indian Space Research Organisation (ISRO) in 2008.
- **Design:** designed to **just orbit the Moon and make observations** with instruments on board.
- **Operation:** operated for 312 days as opposed to the intended two years but the mission achieved 95% of its planned objectives.
- **Key Findings of Chandrayaan-1**
 - Confirmed **presence of lunar water**
 - **Evidence of lunar caves** formed by an ancient lunar lava flow
 - **Past tectonic activity** were found on the lunar surface.
 - The **faults and fractures discovered** could be features of past interior tectonic activity coupled with meteorite impacts.

Curriculum for kids launched



NCF for foundational stage education of children in 3 to 8 years age group unveiled

Union education minister Dharmendra Pradhan on Thursday launched the National Curriculum Framework (NCF) for foundational stage education of children in the three to eight years age group.

Early childhood care and education are

key areas of development, according to the 2022 framework.

"The NCF is an important step taken to implement the New Education Policy-2020. I also appeal to the National Council of Educational Research and Training (NCERT) to complete curriculum, syllabus, and textbooks by next Basant Panchami," Pradhan said at the launch.

The NCF-2022 has four sections—the NCF for School Education, the NCF for Early Childhood Care and Education, the NCF for Teacher Education and the NCF for Adult Education.

Research from across the world on education, neuroscience and economics demonstrates clearly that ensuring free, accessible, high quality early childhood care and education is perhaps the very best investment that any country can make for its future, according to the National Curriculum Framework for foundational stage.

PTI

Context: Union Education launched the National Curriculum Framework (NCF) for foundational stage of education of children in the 3 to 8 years group.

National Curriculum Framework (NCF)

- **About:** The NCF serves as a **guideline for syllabus, textbooks, and teaching practices for the schools in India.**
- **Objectives:** Central to the **implementation of the transformative National Education Policy 2020** is the new National Curriculum Framework (NCF) which will empower and enable outstanding teaching and learning in the country, by converting the vision of the NEP 2020 into reality in our schools and classrooms.
- **4 Components**
 - The National Curriculum Framework for School Education (NCFSE),
 - The National Curriculum Framework for Early Childhood Care & Education (NCFECE),
 - The National Curriculum Framework for Teacher Education (NCFTE),
 - The National Curriculum Framework for Adult Education (NCFAE).
- **Key Features**
 - **Consultative Process:** It sets the mechanisms for the development of a coherent and comprehensive NCF, fully leveraging the widespread consultations already under way.
 - **Multi-Disciplinary Education:** The process designed ensures the seamless integration imagined - vertically (across Stages) and horizontally in the NEP 2020 – to ensure holistic, integrated, and multi-disciplinary education.
 - **Conducive Environment for Teaching:** It enables the critical linkage between the curriculum of schools with the curriculum of Teacher Education as an integral part of the transformative reforms envisioned by the NEP 2020.
 - **Life-long Learning:** It informs the creation of opportunities for life-long learning for all citizens in the country.
 - **Focus on Cutting-edge Research:** Anchored and informed by sound theory and cutting-edge research yet using simple language with real-life illustrations from classrooms and schools in a variety of contexts.
 - **Addressing Huge Learning Loss:** The states and the Centre "must act urgently" to address the "huge learning loss" among students due to the interruptions in regular teaching and learning caused by the pandemic over the last two years.

Afspa Withdrawn from Assam's West Karbi Anglong District

Assam govt extends it in 8 other districts & one sub-division by six months

Bikash.Singh
@timesgroup.com

Guwahati: The Assam government has withdrawn the applicability of Armed Forces (Special Powers) Act, 1958 (Afspa) from West Karbi Anglong district, citing improved law and order situation, and extended it in eight other districts and one sub-division by six months.

Afspa gives immunity to the armed forces. In Assam, these special powers for search and seizure were announced in 1990. In April this year, Afspa was completely removed from 23 districts and partially from one district of the state. It continued in nine districts and one sub-division — Tinsukia, Dibrugarh, Charaideo, Sivasagar, Jorhat, Golaghat, Karbi Anglong, West Karbi Anglong, Dima Hasao and Lakhimpur sub-division of Cachar district.



In April, Afspa was withdrawn from 7 dists in Nagaland. In Manipur, it was lifted from 6 dists

Karbi Anglong, West Karbi Anglong, Dima Hasao and Lakhimpur sub-division of Cachar district.

Context: The Assam government has withdrawn the applicability of Armed Forces (Special Powers) Act, 1958 (AFSPA) from West Karbi Anglong district, citing improved law and order situation, and extended it in eight other districts and one sub-division by six months.

Armed Forces Special Powers Act

- **About:** The British colonial government had on 15th August, 1942, promulgated the **Armed Forces Special Powers Ordinance to suppress the Quit India movement.**
 - **Post independence:** It was the foundation for four ordinances, including one for the “Assam disturbed areas” invoked in 1947 to deal with Partition-induced internal security challenges.
- **AFSPA act:** The Armed Forces (Assam and Manipur) Special Powers Act, 1958, followed the Assam Disturbed Areas Act of 1955 to **deal with the uprising in the Naga Hills and adjoining areas.**
- **Powers to the armed forces:** It allows them to **open fire, even causing death, against any person** in contravention to the law or carrying arms and ammunition.
 - It gives them powers to **arrest individuals without warrants**, on the basis of “reasonable suspicion”, and search premises without warrants.
- **Implementation:** It can be **imposed by the Centre or the Governor of a state**, on the state or parts of it, after these areas are declared “disturbed” under Section 3.
 - The Act was amended in 1972 and the **powers to declare an area as “disturbed” were conferred concurrently upon the Central government** along with the States.
 - The **Union Home Ministry** issues periodic “disturbed area” notification to extend AFSPA **only for Nagaland and Arunachal Pradesh.**
 - The notification for **Manipur and Assam** is issued by the **State governments.**
 - **Tripura** revoked the Act in 2015 and **Meghalaya** was under AFSPA for 27 years, until it was revoked by the MHA from 1st April 2018.
- **Role of States:**
 - **Informal Consultation with State:** While the Act gives **powers to the central government to unilaterally take the decision to impose AFSPA**, this is usually done informally in consonance with the state government.
 - The Centre takes its decision after having received a recommendation from the state government.
 - **Coordination with Local Police:** While the Act gives powers to security forces to open fire, this cannot be done without prior warning given to the suspect.
 - According to the act, after the apprehension of suspects, the security forces have to hand them over to the local police station within 24 hours.
 - It says the armed forces must act in cooperation with the district administration and not as an independent body.

CCI fines Google ₹1,338 crore for unfair practices

The Competition Commission of India has fined Google Rs 1,338 crore for abusing its dominant position in relation to Android mobile devices, and ordered the company to immediately “cease and desist” from such practices, reports Pankaj Doval. CCI said Google forced one-sided agreements on the tech ecosystem, ensuring continued supply of consumer data for its apps to garner advertising revenue, while blocking others. **P 23**

Context: The Competition Commission of India has fined Google Rs 1,338 crore for abusing its dominant position in relation to Android mobile devices.

Competition Commission of India

- **About:** It is a **statutory body** of the Government of India **responsible for enforcing the Competition Act, 2002**, constituted in March 2009.
 - The **Monopolies and Restrictive Trade Practices Act, 1969 (MRTP Act)** was **repealed** and replaced by the Competition Act, 2002, on the recommendations of the **Raghavan committee**.
- **Objective:** To **eliminate practices having adverse effects on competition**, protect the interests of consumers and ensure freedom of trade in the markets of India.
- **Composition:** consists of **one Chairperson and six Members** who shall be appointed by the Central Government.
 - **Eligibility criteria of members of CCI:** The Chairperson and every other Member shall be a person of ability, integrity and standing and who, has been, or is **qualified to be a judge of a High Court**, or, has special knowledge of, and professional experience of not less than 15 years in international trade, economics, business, commerce, law, finance, accountancy, management, industry, public affairs, administration or in any other matter which, in the opinion of the Central Government, may be useful to the Commission.
 - **Tenure:** The Chairperson and other Members shall be **whole-time Members**.
- **Functions:** The commission is a **quasi-judicial body** which gives opinions to statutory authorities and also deals with other cases.

Competition Act, 2002

- **About:** The Competition Act was passed in 2002 and has been **amended by the Competition (Amendment) Act, 2007**.
- **Objectives:** The **Act prohibits anti-competitive agreements**, abuse of dominant position by enterprises and regulates combinations, which causes an appreciable adverse effect on competition within India.
- **Establishment of CCI and CAT:** In accordance with the provisions of the Amendment Act, the Competition Commission of India and the Competition Appellate Tribunal have been established.
 - The government replaced the Competition Appellate Tribunal (COMPAT) with the National Company Law Appellate Tribunal (NCLAT) in 2017.

Text of PM's address at launch of Mission LiFE at Statue of Unity, Gujarat

Context: Prime Minister launched Mission LiFE at the Statue of Unity, Ekta Nagar, Kevadia, Gujarat.

LiFE-Lifestyle for Environment Movement

- **Origin:** The idea of LiFE was introduced by India during the 26th United Nations Climate Change Conference of the Parties (COP26) in Glasgow in 2021.
- **Objective:** The idea promotes an environmentally conscious lifestyle that focuses on 'mindful and deliberate utilisation' instead of 'mindless and wasteful consumption'.
- **Promotion of Circular Economy:** the prevalent "use-and-dispose" economy governed by mindless and destructive consumption will be replaced by a circular economy, defined by conscious and deliberate consumption.
- **Pro-Planet People' (P3):** The Mission plans to create and nurture a global network of individuals, namely 'Pro-Planet People' (P3).
 - P3 will have a shared commitment to adopt and promote environmentally friendly lifestyles.
 - Through the P3 community, the Mission seeks to create an ecosystem that will reinforce and enable environmentally friendly behaviours to be self-sustainable.
- **LiFE Global Call for Papers:** The launch also initiated 'LiFE Global Call for Papers', and invited ideas and suggestions from universities, academics, and research institutions etc in a bid to influence and persuade individuals, organisations and communities across the globe in a bid to adopt an environment conscious lifestyle.

Statue of Unity

- **Inauguration:** Inaugurated on 31st October, 2018 to mark the 143rd birth anniversary of Sardar Patel.
 - Built in honour of Sardar Vallabhbhai Patel.
- **Features:** The Statue of Unity is the tallest statue in the world.
 - At 182 metres, it is 23 metres taller than China's Spring Temple Buddha statue and almost double the height of the Statue of Liberty (93 metres tall) in the US.
- **Added in the 'Eight Wonders':** In January 2020, it was added in the 'Eight Wonders' of the Shanghai Cooperation Organisation (SCO).
- **Location:** located on the Sadhu Bet island on the Narmada river, which flows between the Satpura and the Vindhya mountain ranges.
- **Designed:** designed by Padma Bhushan recipient sculptor Ram V Sutar and intricate bronze cladding work was done by a Chinese foundry, the Jiangxi Toqine Company (JTQ).

Nationwide campaign for elimination of Single Use Plastic

46 tonnes of Single Use Plastic seized

CPCB to intensify inspections for elimination of SUP

Context: The Ministry of Environment, Forest & Climate Change (MoEF&CC) issued Notification banning production, sale, stocking & distribution, import and usage of identified Single Use Plastic (SUP) items including cutlery items, thin packaging films, candy & ice-cream sticks w.e.f. July 01, 2022.

Key Points

- **Monitored by:** The ban will be **monitored by the Central Pollution Control Boards (CPCB)** from the Centre, and by the State Pollution Control Boards (SPCBs) that will report to the Centre regularly.
- **Directions Issued:** Directions have been issued at national, state and local levels - for example, to all petrochemical industries - to not supply raw materials to industries engaged in the banned items.
 - Directions have also been issued to SPCBs and Pollution Control Committees to **modify or revoke consent to operate issued under the Air/Water Act to industries engaged in single-use plastic items.**
 - Local authorities have been **directed to issue fresh commercial licenses** with the condition that SUP items will not be sold on their premises, and existing commercial licences will be cancelled if they are found to be selling these items.
- **Promoting Compostable and Biodegradable Plastics** : The CPCB issued one-time certificates to 200 manufacturers of compostable plastic and the BIS passed standards for biodegradable plastic.
- **Penalty:** Those found violating the ban **can be penalised under the Environment Protection Act 1986** – which allows for imprisonment up to 5 years, or a penalty up to Rs 1 lakh, or both.
 - Violators can also be asked to **pay Environmental Damage Compensation by the SPCB.**

Single-use plastic

- **About:** It refers to plastic items that are **used once and discarded**. E.g., plastics used in packaging items, bottles (shampoo, detergents, cosmetics), polythene bags, face masks, coffee cups, cling film, trash bags, food packaging etc.
- **Waste generation::** According to a 2021 **report of the Minderoo Foundation**, an Australian philanthropic organization, **single-use plastics account for a third of all plastic produced globally, with 98% manufactured from fossil fuels.**
 - **India features in the top 100 countries of single-use plastic waste generation** – at rank 94 (the top three being Singapore, Australia and Oman).
- **Contribution to Greenhouse Gas Emissions:** On the current trajectory of production, it has been projected that **single-use plastic could account for 5-10% of greenhouse gas emissions by 2050.**

Conservationists in Tamil Nadu welcome formation of vulture conservation committee in state

The committee will ensure regular population monitoring of the raptors, scientific dumping and analysis of cattle carcasses among other things



NEXT NEWS >

By Shuchita Jha
Published: Thursday 20 October 2022



Conservation Efforts by India

- **Vulture Action Plan 2020-25:** The Action Plan for Vulture Conservation (APVC) in India, 2020-2025 advocates expansion of the Conservation Breeding Programme of vultures by establishing more centres in different parts of the country.
- **Vulture Conservation and Breeding Centre:** It is a joint project of the Haryana Forest Department and the Bombay Natural History Society (BNHS) to save the three species of vultures, the White-backed, Long-billed and Slender-billed, from looming extinction.

International efforts

- **SAVE (Saving Asia's Vultures from Extinction):** It includes fourteen organisations involved and committed to helping the vultures to date, and this number is steadily growing.
 - Bombay Natural History Society works with SAVE.

Context: The Government of Tamil Nadu has constituted the State-level Committee for Vulture Conservation (SLCVC) for coordination between various wings of the government to implement the Action Plan for Vulture Conservation (APVC) 2020-2025.

Key Points

- The committee will ensure scientific management of carcass dumps and analyse cattle carcass samples in the state to ensure no harmful drugs are ingested by vultures.
- The committee will also work to establish efficient regulatory mechanisms for ban on drugs found toxic to vultures like non-steroidal anti-inflammatory drugs (NSAIDs) that have been banned under the Vulture Action Plan (2020-25).
- In 2015, Tamil Nadu became the first state to ban the veterinary use of ketoprofen in Nilgiri, Erode and Coimbatore districts.
- Oriental white backed vulture, long-billed vulture, red-headed vulture found in Tamil Nadu are critically endangered, while Egyptian vulture is in the endangered category.
- The country's vulture population dropped to 18,645 in 2015 from over 40,000 in 2003, as shown by the last vulture census conducted by intergovernmental body Bird Life International.

Vultures

- It is one of the 22 species of large carrion-eating birds that live predominantly in the tropics and subtropics.
- They act an important function as nature's garbage collectors and help to keep the environment clean of waste.
- Vultures also play a valuable role in keeping wildlife diseases in check.
- Threats include Poisoning from diclofenac, Loss of Natural Habitats, Food Dearth and Contamination and Electrocution by Power lines.

Vultures in India

- India is home to 9 species of Vulture namely the Oriental white-backed, Long-billed, Slender-billed, Himalayan, Red-headed, Egyptian, Bearded, Cinereous and the Eurasian Griffon.
- Bearded, Long-billed, Slender-billed, Oriental white-backed are protected in the Schedule-1 of the Wildlife Protection Act 1972.
 - Rest are protected under 'Schedule IV'.

IUCN Status

- **Critically Endangered:** Oriental White-backed Vulture, Long-billed Vulture, Slender-billed Vulture and Red-headed Vulture.
- **Endangered:** Egyptian Vulture.
- **Near Threatened:** Himalayan Vulture, Cinereous Vulture and Bearded Vulture.
- **Least Concern:** Eurasian Griffon.

Monster Black Hole Spews Fire at Galaxy

Staff



Tricolour image of the newly discovered RAD12, showing the optical image from CFHT (in Green/yellow) and radio images from GMRT (325 MHz in red) and MeerKAT (900 MHz in blue). During the merger of these two galaxies, the supermassive black hole at the centre of the smaller galaxy is shooting out a relativistic magnetised plasma jet hitting the bigger companion galaxy.

Elements of a black hole

Accretion disc

A swirling mass of matter destined to spiral into the black hole or be ejected into space

Event horizon

Gravitational boundary beyond which neither light nor matter can escape

Relativistic jets

Matter and radiation extending out hundreds of thousands of light years

Context: A team of Indian astronomers has found a unique supermassive black hole, ejecting out highly energetic, relativistic, magnetised plasma-jet (red & blue in the image) towards another galaxy (yellow).

Key Points

- **Two major types of galaxies:** spiral galaxy and elliptical galaxy.
 - Stars are formed more in spiral galaxies (around one Sun-like star per year), whereas in elliptical galaxies the star formation process is very slow.
- **RAD 12 galaxy:** They have found a galaxy, named RAD 12, having a supermassive black hole at the centre.
- **Supermassive blackhole:** It is at the centre of a galaxy emits a magnetised plasma jet, which is ejected from both ends of the black hole.
 - Scientists have found something strange, i.e., the magnetised plasma has been ejected only at one end of the black hole, and it is headed towards another galaxy (can be seen in the image), consequently heating the galaxy.
- **Significance:** opportunity for astronomers to study how supermassive blackholes destroy the star-forming future of an elliptical galaxy.

Black Hole

- **About:** It refers to a point in space where the matter is so compressed as to create a gravity field from which even light cannot escape.
 - The concept was theorized by Albert Einstein in 1915 and the term 'black hole' was coined in the mid-1960s by American physicist John Archibald Wheeler.
- **Two categories:**
 - **First one:** ranges between a few solar masses and tens of solar masses. These are thought to form when massive stars die.
 - **Other one:** The other category is of supermassive black holes. These range from hundreds of thousands to billions of times that of the sun from the Solar system to which Earth belongs.
- **Creation of G-Waves:** Gravitational waves are created when two black holes orbit each other and merge.

THANK YOU!



t.me/theiashub



[/mkyadav](https://www.youtube.com/channel/UCmkyadav)



www.theiashub.com/daily-quiz



9560082909