Current Affairs – Notes

18 October 2026

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1 India's first field study of dengue vaccine (Qdenga) and mosquito repellents begins at Kadayanallur: Minister Arunraj

Health

News

At an event at the Kadayanallur Government General Hospital, Tenkasi district, on 17 Oct 2026, Medical, Medical Education and Public Welfare Minister K.G. Arunraj launched India's first field study on dengue vaccination and mosquito repellents. It is not a mass vaccination rollout but a pilot study with voluntary, written consent. ICMR's National Institute of Epidemiology (NIE), Chennai, is conducting it with the Tamil Nadu Public Health Department in the 33 wards of Kadayanallur municipality. Japan's Takeda vaccine 'Qdenga' will be used, and skin-applied creams and electric liquid repellents will also be tested. Results go to NTAGI; any statewide expansion depends on its advice.

Key facts

Date, place	17 Oct 2026 – Kadayanallur Govt General Hospital, Tenkasi district
Announced by	Minister K.G. Arunraj (Health & Family Welfare)
Nature	Pilot field study – voluntary, written consent, ethics approval
Conducted by	ICMR–NIE (Chennai) + TN Public Health Dept; 33 wards of Kadayanallur municipality
Vaccine	Qdenga – Takeda (Japan); all 4 serotypes; 2 doses 3 months apart; CDSCO approval July 2026 (age 4–60)
Repellents	Skin creams, electric liquid vaporisers – tested for reduction in lab-confirmed dengue

Background

- Science: dengue is caused by a flavivirus (family Flaviviridae, an RNA virus) with 4 serotypes, DENV-1 to DENV-4. A second infection with a different serotype raises the risk of severe dengue. Symptoms: high fever, body pain, falling platelets. There is no specific drug.
- Vector: female Aedes aegypti (also Aedes albopictus) – a day-biter that breeds in stored clean water. The same mosquito spreads chikungunya, Zika and yellow fever.
- India: National Dengue Day – 16 May. Dengue control – National Center for Vector Borne Diseases Control (NCVBDC), Health Ministry. Phase-3 trial of the indigenous vaccine 'DengiAll' (ICMR, Panacea Biotec) began in 2024.
- Qdenga – a live attenuated tetravalent vaccine; licensed in 40+ countries; WHO-prequalified (May 2024). Indian manufacturing partner – Biological E (Hyderabad).

Tamil Nadu link: ICMR–NIE is in Chennai. India's first State public health law – the Tamil Nadu Public Health Act, 1939; Tamil Nadu has a separate Directorate of Public Health. Kadayanallur, which recently saw a dengue outbreak with deaths, was chosen for the study.

2 'Thenisai Thendral' composer Deva (75) passes away – laid to rest with State honours and 72-gun salute in Ranipet district

Tamil Nadu

News

Composer Deva (Devanesan Chokkalingam, 75), hailed as 'Thenisai Thendral' and the 'King of Gaana', died of cardiac arrest at a private hospital in Chennai on Saturday, 17 Oct 2026. CM C. Joseph Vijay paid homage at his T. Nagar residence, consoled his son Srikanth Deva and announced full State honours. On 18 Oct he was laid to rest on his family farmland in Sakkaramallur near Arcot, Ranipet district, with a 72-gun salute. Rajinikanth, Kamal Haasan and others paid tribute.

Key facts

Death	17 Oct 2026, Chennai – cardiac arrest; age 75
Real name	Devanesan Chokkalingam; born 20 Nov 1950
Funeral	18 Oct – Sakkaramallur near Arcot, Ranipet district; 72-gun salute
Debut	'Maattukara Mannaru' (1986); 400+ films in 4 languages
Key films	Annamalai, Baashha, Arunachalam, Aasai, Kadhal Kottai, Vaalee, Kushi, Avvai Shanmugi
Awards	TN State Film Award – 'Vaigasi Poranthachu' (1990), Aasai, Kushi; Filmfare (Kannada) – 'Amrutha Varshini'

Background

- Gaana – an urban folk music form born among the working people of North Chennai, sung at funerals and festivals. Deva brought it into mainstream film music, earning the title 'Father/King of Gaana'.
- Bridging the Ilaiyaraaja and A.R. Rahman eras, he gave hits for Rajinikanth ('Annamalai', 'Baashha'), Kamal Haasan, Vijay and Ajith. His 100th film was 'Veluchami' (1995).
- State honours: granting a full State funeral is the State government's decision – it includes draping the body in the national flag, a police guard and a gun salute.
- TN arts awards: 'Kalaimamani' is given by the Tamil Nadu Iyal Isai Nataka Manram. Nationally – Sangeet Natak Akademi (New Delhi); cinema's highest honour is the Dadasaheb Phalke Award (I&B Ministry).

Tamil Nadu link: Deva was a Chennai composer who took North Chennai's Gaana music to the world. The Tamil Nadu government gave him the Best Music Director award three times. He was laid to rest with State honours in Ranipet district.

3 PM-AJAY: 18,093 Scheduled Caste-majority villages declared 'Adarsh Grams' (model villages)

Welfare Schemes

News

Under the 'Adarsh Gram' component of the Pradhan Mantri Anusuchit Jaati Abhyuday Yojana (PM-AJAY), run by the Union Ministry of Social Justice and Empowerment, 18,093 Scheduled Caste-majority villages had been declared model villages as of 8 Sept 2026 (PIB, 16 Oct 2026). Over 47,200 villages are covered; over 47.79 lakh people have benefited; 46,944 works are complete and 27,032 Village Development Plans prepared. Under Grants-in-Aid, about ₹1,730 crore was released directly to States from 2021–22 to 2025–26, giving skilling and livelihood support to over 2.5 lakh beneficiaries; 785 student hostels were completed by Sept 2026.

Key facts

Scheme	PM-AJAY – launched 2021–22; 100% centrally funded
Ministry	Social Justice & Empowerment
Merged schemes	PMAGY (2009–10), SCA to SCSP, Babu Jagjivan Ram Chhatrawas Yojana
3 components	Adarsh Gram; Grants-in-Aid for State/district projects; hostels
Adarsh Gram	18,093 declared (as of 8 Sept 2026); 47,200+ villages covered
GIA / hostels	₹1,730 crore (2021–26); 2.5 lakh+ beneficiaries; 785 hostels

Background

- History: Pradhan Mantri Adarsh Gram Yojana (PMAGY) was announced in the 2009–10 Union Budget and piloted in 1,000 villages with over 50% SC population in 5 States – Assam, Bihar, Himachal Pradesh, Rajasthan and Tamil Nadu. In 2021–22, PMAGY, SCA to SCSP and BJRCY were merged into PM-AJAY.
- Constitution: Art 15(4) – special provisions for SCs; Art 17 – abolition of untouchability; Art 46 (DPSP) – promotion of educational and economic interests of SCs/STs; Art 341 – President notifies Scheduled Castes; Art 338 – National Commission for Scheduled Castes (NCSC).
- Funding: up to 50% for gap-filling works in villages, up to 5% for technical support groups, up to 2% for hostels; the rest as Grants-in-Aid. 100% centrally funded. Monitored via the PM-AJAY app and portal.

Tamil Nadu link: Tamil Nadu was one of the 5 States in the 2009–10 PMAGY pilot – 225 villages. As per Census 2011, Scheduled Castes form 20.01% of Tamil Nadu's population. The Adi Dravidar and Tribal Welfare Department implements these schemes in the State.

4 Zero sugar diversion to ethanol in ESY 2026–27 – cane juice, sugar syrup, B-heavy molasses excluded: Centre

Economy

News

The Centre has directed that sugar diversion for ethanol be 'reduced to zero' in Ethanol Supply Year 2026–27 (ESY: 1 Nov 2026 – 31 Oct 2027). Accordingly, the tender for about 1,100 crore litres of ethanol issued by the public-sector oil marketing companies (IOCL, BPCL, HPCL) on 16 Oct 2026 sought no ethanol made from sugarcane juice, sugar, sugar syrup or B-heavy molasses. C-heavy molasses, maize, broken/damaged grains and surplus FCI rice are allowed. The incentive for maize ethanol was cut from ₹5.79 to ₹2.79 a litre. Reason – drought in Maharashtra and Karnataka has cut sugar output; the aim is to secure domestic sugar stocks and prices. The Government says the E20 target will not be affected.

Key facts

Directive	Sugar diversion in ESY 2026–27 = zero
Tender	OMCs (IOCL, BPCL, HPCL), 16 Oct 2026; ~1,100 crore litres
Excluded	Cane juice, sugar, sugar syrup, B-heavy molasses
Allowed	C-heavy molasses, maize, damaged grains, surplus FCI rice
Reason	Drought – lower sugar output (2025–26: 30.6 million t); 1 Oct stock 3.75 million t
Feedstock share	About three-fourths of ethanol now comes from grains

Background

- Policy: National Policy on Biofuels 2018 (Ministry of Petroleum & Natural Gas); the 2022 amendment advanced the E20 target from 2030 to ESY 2025–26. E20 (20% ethanol in petrol) is now the nationwide standard. Aims – cut crude imports and emissions, raise farm income.
- Science: ethanol (C_2H_5OH) is made by yeast (Saccharomyces cerevisiae) fermenting sugar/starch. 1G ethanol – cane, grain; 2G – straw, farm residue (cellulose). India's first 2G plant – Panipat (Haryana, IOCL), 2022. 'PM JI-VAN Yojana' (2019) supports 2G.
- Molasses: the syrup left after sugar is extracted. B-heavy still holds much sugar (using it cuts sugar output); C-heavy is final molasses from which no more sugar can be recovered. Cane-juice use was also curbed in Dec 2023 and relaxed for 2024–25.
- Economy: Fair and Remunerative Price (FRP) of cane is fixed by the Centre on CACP's advice (Sugarcane (Control) Order 1966, Essential Commodities Act 1955). Levy sugar was abolished in 2013 on the Rangarajan Committee's advice – partial decontrol. Top cane producer – Uttar Pradesh.

Tamil Nadu link: Tamil Nadu has cooperative, public-sector and private sugar mills, many with distilleries. The State announces a 'special incentive' over the Centre's FRP every year. With sugar-based ethanol barred, mills must turn to C-heavy molasses and grain ethanol.

5 US firm Reflect Orbital, which plans to 'sell sunlight at night', books two launches with India's Skyroot Aerospace

Science

News

Reflect Orbital, a California-based US start-up, announced on 14 Oct 2026 that it has booked two dedicated rocket launches with Hyderabad's Skyroot Aerospace. The first will fly on 'Vikram-1' and the second on 'Vikram-1U', still under development; launch dates and prices were not disclosed. The company plans to use mirrors in orbit to reflect sunlight onto chosen spots on Earth (a patch about 5 km across) after sunset – for uses such as search-and-rescue and extending power generation at solar farms.

Key facts

Deal	Reflect Orbital (California, USA) – Skyroot Aerospace (Hyderabad); announced 14 Oct 2026
Rockets	1st: Vikram-1; 2nd: Vikram-1U (extra first-stage boosters, under development)
Concept	Orbital mirrors reflect sunlight to light a patch about 5 km wide at night
Demo satellite	'Eärendil-1' – cleared by the US FCC in July 2026
Vikram-1	Maiden orbital flight 'Aagaman' – 18 July 2026, Sriharikota; up to 350 kg to LEO
Concerns	Light pollution, interference with astronomy, wildlife and human circadian rhythms

Background

- Skyroot Aerospace – Hyderabad; co-founder Pawan Kumar Chandana (CEO). The 'Vikram' rockets are named after Vikram Sarabhai, father of the Indian space programme. 'Vikram-S' (mission Prarambh) flew from Sriharikota on 18 Nov 2022 – India's first private rocket (sub-orbital). Vikram-1 became the first orbital rocket launched from Indian soil by a private Indian company (18 July 2026).
- Policy: the space sector was opened to private players in 2020; IN-SPACe (Indian National Space Promotion and Authorisation Centre) is the single-window body that promotes and authorises private space activity, headquartered in Ahmedabad. The Indian Space Policy 2023 was approved by the Union Cabinet in Apr 2023.
- Science: a mirror works by reflection – angle of incidence equals angle of reflection. A similar attempt was made before: Russia's 'Znamya' experiment (1993) sent a beam of reflected sunlight from orbit to Earth; it was later dropped for lack of funds.

Tamil Nadu link: ISRO is building the small-satellite launch complex (SSLV Launch Complex) at Kulasekarapattinam, Thoothukudi district, on about 2,233 acres at ₹986 crore – the PM laid the foundation stone in Feb 2024. In Aug 2026 IN-SPACe invited Expressions of Interest from private firms to operate and maintain it; ownership stays with the Department of Space.

6 North Korea successfully tests a new high-speed torpedo that uses AI to detect and precisely hit targets

Defence

News

North Korea's state news agency KCNA reported on 17 Oct 2026 that the country had tested a new 'high-speed precision-guided torpedo' system underwater on Thursday, 15 Oct 2026. Target detection and guidance are handled by artificial intelligence (AI); KCNA said the test verified propulsion technology developed through more than 180 tests over five years and called it 'a significant step in the country's naval development'. Earlier, on 14 Oct, two types of submarine-launched 'strategic cruise missiles' were tested – the first publicly reported submarine-launched cruise-missile test since January 2024.

Key facts

Test	High-speed precision-guided torpedo – 15 Oct 2026; KCNA report 17 Oct
AI role	Target detection and guidance
Propulsion	180+ tests over 5 years; improved propulsion efficiency verified
Related tests	14 Oct – 2 types of submarine-launched strategic cruise missiles (eastern waters); 3 Oct – hypersonic intermediate-range missile test
Leader / capital	Kim Jong Un; Pyongyang
Headline note	Not an 'underwater bomb' – a torpedo; nor the 2023 'Haeil' nuclear underwater drone

Background

- History: after World War II, Korea was divided in 1945 along the 38th parallel – Soviet north, US south. The Korean War lasted from 25 June 1950 to 27 July 1953; the armistice was signed at Panmunjom (no peace treaty); a Demilitarised Zone (DMZ) separates the two. India chaired the Neutral Nations Repatriation Commission for prisoners of war (Gen. K.S. Thimayya).
- Nuclear: North Korea announced withdrawal from the Nuclear Non-Proliferation Treaty (NPT, 1968/1970) in January 2003 – the only country to do so; its first nuclear test was in Oct 2006. UN Security Council sanctions continue. In 2023 it also claimed tests of 'Haeil', a nuclear-capable underwater drone.
- Science: a torpedo is a self-propelled underwater weapon. Underwater targets are found with SONAR (Sound Navigation And Ranging) – ultrasonic waves are sent out and distance is worked out from the time the echo takes to return; bats and dolphins use the same echolocation. Sound is used because radio waves fade quickly in water. India's heavyweight torpedo is 'Varunastra' – DRDO's NSTL, Visakhapatnam.

Tamil Nadu link: no direct link. Related TN fact: the naval station 'INS Kattabomman' (1990) at Vijayanarayanam, Tirunelveli district, is a Very Low Frequency (VLF) transmitting station used to communicate with submerged submarines.

7 India's space economy is about $9 billion now and may reach $40–45 billion in 7–8 years – Minister Jitendra Singh (17 Oct)

Space

News

Speaking at a media roundtable, 'Space, Sovereignty and New Economy', organised by the Bloomberg New Economy Forum in New Delhi on Saturday, 17 Oct 2026, Minister of State for Space Dr Jitendra Singh said India's space economy is about US$9 billion now and could grow nearly five-fold to $40–45 billion in the next 7–8 years. He stressed domestic and foreign investment, faster licence approvals, government 'anchor customer' support and real benefits from GST reforms for space products.

Key facts

Event	Bloomberg New Economy Forum media roundtable, New Delhi – 17 Oct 2026
Current size	About $9 billion
Target	$40–45 billion in 7–8 years (about 5-fold)
IN-SPACe decadal vision	$44 billion by 2033; about 8% of the global space market
Minister	Dr Jitendra Singh – MoS (Independent Charge) Science & Technology, Earth Sciences; MoS in PMO, Atomic Energy and Space
Private opening	Sector opened to private players in June 2020; over 400 space start-ups by June 2026

Background

- Structure: the Department of Space (DoS, 1972) functions directly under the Prime Minister; ISRO was formed on 15 Aug 1969 (forerunner INCOSPAR, 1962 – Vikram Sarabhai); HQ Bengaluru. Commercial arms: Antrix (1992) and NewSpace India Limited (NSIL, 2019); IN-SPACe (2020) authorises private players.
- Future plans (Space Vision 2047): India's own space station 'Bharatiya Antariksh Station' (BAS) by 2035; an Indian on the Moon by 2040; Gaganyaan – the human spaceflight programme.
- Economy: Indian Space Policy 2023; FDI rules eased in 2024 – up to 74% automatic route in satellite manufacturing, 49% in launch vehicles, 100% in components. Most revenue comes from satellite communication, Earth observation and geospatial services.

Tamil Nadu link: the ISRO Propulsion Complex (IPRC) at Mahendragiri, Tirunelveli district, tests and integrates cryogenic and liquid engines and rocket stages. The SSLV launch port at Kulasekarapattinam, Thoothukudi district (₹986 crore), is being built – targeted for commissioning in 2026–27.

8 Trade margins on anti-cancer drugs capped at 30% – prices may fall by up to 70%

Health

News

The National Pharmaceutical Pricing Authority (NPPA), at its 151st meeting on 8 Oct 2026, approved in principle a cap on the trade margin of about 110 non-scheduled anti-cancer drugs (35 of them patented) at 30% of the maximum retail price (MRP). Prices are expected to fall by 20% to 70%, saving patients about ₹2,500 crore a year. NPPA will issue the formal notification after an expert committee under the Director General of Health Services (DGHS) finalises the list. The Centre also informed the Supreme Court of the decision on 12 Oct.

Key facts

Decision	NPPA 151st meeting, 8 Oct 2026 – in-principle approval; formal notification to follow
Drugs	About 110 non-scheduled anti-cancer drugs (35 patented); branded, generic, domestic and imported
Cap	Trade margin ≤ 30% of MRP
Benefit	Prices down 20–70%; about ₹2,500 crore saved a year
Reason	Average mark-up about 170%; up to 700% in places
Precedent	Feb 2019 – 42 cancer drugs (526 brands), about ₹984 crore saved a year

Background

- Structure: NPPA was set up in 1997 by a Government of India resolution; it is an attached office of the Department of Pharmaceuticals, Ministry of Chemicals & Fertilizers. It enforces the Drugs (Prices Control) Order (DPCO) 2013, issued under the Essential Commodities Act, 1955.
- Rules: 'scheduled' drugs are those in the National List of Essential Medicines (NLEM; the current one is NLEM 2022 – 384 drugs) and have ceiling prices. Makers of other 'non-scheduled' drugs may not raise MRP by more than 10% a year. Para 19 of the DPCO lets the government fix the price of any drug in public interest (the 2019 move used it). Trade margin = the gap between the price to the distributor/stockist and the MRP.
- Other steps: the Union Budget 2025–26 fully exempted 36 life-saving drugs (cancer, rare diseases) from basic customs duty; PM Bhartiya Janaushadhi Pariyojana runs low-cost generic medicine stores (Department of Pharmaceuticals). Science: cancer is uncontrolled multiplication of cells (loss of control over mitosis); treatments – surgery, radiotherapy, chemotherapy, immunotherapy.

Tamil Nadu link: the Cancer Institute (WIA), Adyar, Chennai, was started in 1954 by the Women's Indian Association through the efforts of Dr Muthulakshmi Reddy; Dr V. Shanta led it for decades (Ramon Magsaysay Award 2005, Padma Vibhushan 2016). Muthulakshmi Reddy was India's first woman legislator (Madras Legislative Council).

9 Nutrient-rich purple potato 'Kufri Jamunia' – anthocyanin-rich variety developed by ICAR-CPRI

Agriculture

News

The purple potato variety 'Kufri Jamunia', developed by ICAR's Central Potato Research Institute (ICAR-CPRI, Shimla), was highlighted on 18 Oct 2026 (New Delhi) as a nutrient-rich food to fight 'hidden hunger' (micronutrient deficiency). With dark purple skin and purple flesh, it was officially released in 2024 (one of 109 new crop varieties released by the PM on 11 Aug 2024). It has 42.05 mg anthocyanins per 100 g in the flesh and 80.66 mg in the skin; vitamin C about 42.75 mg; it is also richer in zinc and iron. Yield is 32–35 tonnes per hectare; recommended for the North Indian plains.

Key facts

Variety	Kufri Jamunia – India's first purple-fleshed potato; medium maturing
Developer	ICAR-CPRI, Shimla (Himachal Pradesh)
Anthocyanin	Flesh 42.05 mg/100 g; skin 80.66 mg/100 g
Other nutrients	Vitamin C ~42.75 mg; zinc 2.28 mg; iron 3.22 mg (per 100 g)
Yield	32–35 t/ha; ~90% marketable
Earlier coloured varieties	Kufri Neelkanth (2018 – purple skin), Kufri Manik (2021 – red skin, yellow flesh)

Background

- Potato (Solanum tuberosum) – family Solanaceae; the edible part is a stem tuber – its 'eyes' are nodal buds. Greened tubers form the toxin solanine. Origin: the Andes of South America (Peru–Bolivia); brought to India by the Portuguese.
- Science: anthocyanins are water-soluble flavonoid pigments stored in the cell vacuole; red in acid, blue in alkali; antioxidants. Also found in jamun, brinjal and red cabbage. Biofortification – raising micronutrients in the crop itself through breeding.
- Institutions: ICAR-CPRI – set up at Patna in Aug 1949, moved to Shimla in 1956, under ICAR since 1966. International Potato Center (CIP, a CGIAR centre) – Lima, Peru. UN 'International Day of Potato' – 30 May.
- Economy–geography: India is the world's second-largest potato producer (China first); 2024–25 final estimate 585.71 lakh tonnes. Uttar Pradesh leads, followed by West Bengal and Bihar. In the plains it is a Rabi (winter) crop.

Tamil Nadu link: ICAR-CPRI's Central Potato Research Station has functioned at Muthorai near Udhagamandalam since 1957; the Nilgiris hills are TN's potato hub. A cyst-nematode-resistant variety it released in 1985 is still widely grown in the Nilgiris; the TN Government opposed a move to close the station in 2018. Kufri Jamunia is recommended only for the northern plains.

10 18 October – World Menopause Day; 2026 theme: 'Chronic Pain at Midlife'

Important Days

News

World Menopause Day is observed every year on 18 October; in 2026 it falls on a Sunday. It is led by the International Menopause Society (IMS). The 2026 theme is 'Chronic Pain at Midlife' – recognising persistent pain in midlife women, improving research and providing evidence-based care.

Key facts

Date	18 October (annual)
Led by	International Menopause Society (IMS)
2026 theme	Chronic Pain at Midlife
2025 theme	Lifestyle Medicine
Definition (WHO)	12 consecutive months without menstruation; usually at 45–55 years
IMS Congress 2026	Rio de Janeiro, Brazil (30 Sep – 3 Oct)

Background

- Science: menopause is a natural event in which ovarian function declines and the hormones oestrogen and progesterone fall. The transition before it is 'perimenopause'. Symptoms: hot flushes, night sweats, sleeplessness, mood changes, joint and back pain.
- Health risks: oestrogen protects bone; its fall reduces bone density and raises the risk of osteoporosis and fractures, and also of heart disease. Calcium, vitamin D and exercise are advised; doctors may give menopausal hormone therapy (MHT) where needed.
- Polity: in Dr. Jaya Thakur v. Union of India (30 Jan 2026; Justices J.B. Pardiwala and R. Mahadevan), the Supreme Court held menstrual health in schools to be part of Article 21 (life and dignity) and ordered free oxo-biodegradable sanitary napkins and separate toilets for girls in all schools – government, aided and private.

Tamil Nadu link: under the menstrual hygiene programme started in 2011 under the late CM J. Jayalalithaa, adolescent girls get free sanitary napkins; it ran in rural areas for nine years and was extended to urban areas in 2020; postnatal mothers and women prisoners are also covered.

11 TB Mukt Panchayat – 46,118 gram panchayats certified TB-free nationwide; 2,390 in Tamil Nadu

Health

News

According to a Press Information Bureau (PIB) note of 14 Oct 2026 on the Union Health Ministry's National TB Elimination Programme (NTEP), 46,118 gram panchayats across India have been certified TB-free under the 'TB Mukt Panchayat' initiative. As per the WHO Global TB Report 2025, India's new TB cases fell 21% between 2015 and 2024 (12% globally) and deaths fell 28%. In Tamil Nadu, 2,390 village panchayats were certified TB-free for 2025.

Key facts

Launch	24 Mar 2023 – One World TB Summit, Varanasi – PM Modi
Ministry	Union Ministry of Health & Family Welfare (Central TB Division); implemented through panchayats
Criteria	Presumptive-TB testing rate, notification rate (mandatory) + drug-susceptibility testing, treatment adherence, nutrition, Ni-kshay Poshan payment
Award	Mahatma Gandhi statuette with certificate – bronze (1 yr), silver (2 yrs), gold (3 yrs); given by the District Collector on World TB Day
Ni-kshay Poshan	Since 2018 (₹500 a month); doubled to ₹1,000 in 2024 (DBT)
100-day campaign	7 Dec 2024 – 347 districts in 33 States/UTs; later nationwide

Background

- Science: tuberculosis is caused by the bacterium Mycobacterium tuberculosis; it spreads through the air and mostly affects the lungs. The day Robert Koch announced discovering the germ (24 March 1882) is marked as World TB Day. The vaccine for children is BCG (Bacillus Calmette–Guérin).
- Programme history: the Revised National TB Control Programme (RNTCP) was renamed the National TB Elimination Programme (NTEP) in 2020. India set a goal of ending TB by 2025, five years ahead of the UN SDG (3.3) target of 2030.
- PM TB Mukt Bharat Abhiyaan – 9 Sep 2022: a people's movement (Jan Andolan) in which 'Ni-kshay Mitra' donors give nutrition kits to patients.
- Polity: public health is a State List subject (Seventh Schedule); the Eleventh Schedule (73rd Amendment) gives panchayats 'health and sanitation' – the basis for the TB Mukt Panchayat effort.

Tamil Nadu link: 2,390 village panchayats in TN were certified TB-free in 2025; 93,203 cases were detected in 2025 and 48,469 in Jan–June 2026 (Health Minister K.G. Arunraj, July 2026). Since April 2022, the 'Tamil Nadu Kasanoi Erappila Thittam' (TN-KET, TB death-free project) triages severely ill patients at diagnosis (severe undernutrition, breathlessness, inability to stand) and admits them, cutting deaths.

12 5th Asian Para Games open in Aichi–Nagoya, Japan on 18 Oct (18–24 Oct)

Sports

News

The 5th Asian Para Games open on 18 Oct 2026 at Paloma Mizuho Stadium, Nagoya, in Aichi–Nagoya, Japan (18–24 Oct), with 18 sports across Aichi and Shizuoka prefectures and about 45 nations. Motto: 'Imagine One Heart'; mascot: 'Uzumin'. India sends 168 athletes (112 men, 56 women) in 11 sports; Pramod Bhagat (para badminton) and Simran Sharma (para athletics) carry the flag at the opening (Bhavina Patel, named earlier, was replaced due to her match schedule). Chef de Mission: Rahul Swami.

Key facts

Edition	5th Asian Para Games; 18–24 Oct 2026
Venue	Aichi–Nagoya, Japan; opening at Paloma Mizuho Stadium
Scale	18 sports, 508 events, about 45 nations
India team	168 athletes, 11 sports; flag-bearers: Pramod Bhagat, Simran Sharma
Last edition	Hangzhou 2022 (held Oct 2023) – India 111 medals (29 G, 31 S, 51 B) – best ever
PCI	President Devendra Jhajharia; Chef de Mission Rahul Swami

Background

- History: the first Asian Para Games were held at Guangzhou, China, in 2010; then Incheon (2014), Jakarta (2018) and Hangzhou (2022 edition, held in 2023). They are run by the Asian Paralympic Committee (APC), headquartered in Dubai, UAE.
- The 20th Asian Games were held in the same cities from 19 Sep to 4 Oct 2026. Para sport worldwide is governed by the International Paralympic Committee (IPC) – Bonn, Germany.
- Polity–law: the Rights of Persons with Disabilities Act, 2016 recognises 21 disabilities; 'sports' is a State List subject (Entry 33). The Union Ministry of Youth Affairs & Sports supports athletes through TOPS.

Tamil Nadu link: India's para badminton squad includes Tamil Nadu's Thulasimathi Murugesan (SU5 – Paris 2024 silver), Manisha Ramadass (SU5 – Paris bronze), Nithya Sre Sivan (SH6 – Paris bronze) and Sivarajan Solaimalai (SH6). High jumper Mariyappan Thangavelu of Periyavadagampatti, Salem (Rio 2016 gold, Tokyo silver, Paris bronze) is not in this squad.

13 Misleading food claims: FSSAI issues notices to Nestle India and Hindustan Unilever

Food Safety

News

The Food Safety and Standards Authority of India (FSSAI) announced on 17 Oct 2026 that it had served notices on two major companies. (1) Nestle India – 'Resource Renal Vanilla Flavour Powder' (for dietary management of chronic kidney disease): the prior approval required under the 2022 special-food regulations had not been obtained, and the mandatory veg/non-veg symbol was missing – a show-cause notice. (2) Hindustan Unilever (HUL) – claims on 'Horlicks Mother's Plus' ('for baby's healthy birth weight') and 'Horlicks Women's Plus' ('clinically proven to improve bone strength', 'No Added Sugar' though it contains maltodextrin) were found potentially misleading, and an explanation was sought. The same day the licence of 'Bala Ji Food Products' was cancelled for hygiene violations.

Key facts

Announced	17 Oct 2026 – FSSAI
Nestle product	Resource Renal – kidney-disease food; no prior approval, no veg/non-veg logo
HUL products	Horlicks Mother's Plus, Women's Plus – birth-weight, bone-strength, 'No Added Sugar' claims
Rules	FSS (Health Supplements, Nutraceuticals, FSDU, FSMP…) Regulations 2022; FSS (Advertising & Claims) Regulations 2018
Licence cancelled	Bala Ji Food Products – hygiene violations
FSSAI	FSS Act 2006; set up 2008; Health Ministry; HQ New Delhi

Background

- FSSAI: statutory body set up in 2008 under the Food Safety and Standards Act, 2006; under the Union Ministry of Health and Family Welfare; HQ New Delhi (FDA Bhawan, Kotla Road). The Act consolidated older laws including the Prevention of Food Adulteration Act, 1954. The 'Eat Right India' movement was launched in 2018.
- Legal framework: FSS (Advertising and Claims) Regulations, 2018 – food claims must be scientifically substantiated; words like 'natural', 'fresh', 'healthy' are restricted. Section 53 of the FSS Act – penalty up to ₹10 lakh for misleading advertisements. FSS (Labelling and Display) Regulations, 2020 – green dot for veg, brown dot for non-veg.
- Consumer protection: the Central Consumer Protection Authority (CCPA) was set up on 24 July 2020 under Section 10 of the Consumer Protection Act, 2019; it issued Guidelines for Prevention of Misleading Advertisements in 2022. CCPA is under the Department of Consumer Affairs.
- Companies & science: Nestle – Switzerland (Vevey); Nestle India – Gurugram. HUL – Mumbai; parent Unilever (London); Horlicks came to HUL in 2020 through the merger of GSK Consumer Healthcare. Maltodextrin is a glucose polymer derived from starch; it is quickly broken down to glucose, which is why the 'No Added Sugar' claim was questioned.

Tamil Nadu link: the FSS Act is enforced in the State by the Tamil Nadu Food Safety and Drug Administration Department (Commissioner of Food Safety). As per Lok Sabha replies of 24 July 2026, Tamil Nadu recorded the highest number of criminal convictions in the country – 2,865 from 2021–22 to 2025–26 – and topped food testing in 2025–26 with 44,603 samples.

14 Converts to Islam cannot claim BC (Muslim) 3.5% quota on the basis of former caste – Supreme Court

Judiciary

News

On 15 Oct 2026 (Thursday) the Supreme Court upheld the Madras High Court (Madurai Bench) judgment of 25 June 2026 (Justices G.R. Swaminathan and P.B. Balaji) that struck down Tamil Nadu's G.O.(Ms) No. 31 of 9 March 2024, which allowed converts to Islam from Hindu BC, MBC, Denotified Communities and SC to be treated as BC (Muslims); it dismissed the State's SLP. Bench: Justices Prashant Kumar Mishra and Shree Chandrashekhar. It held that backwardness from the former social order cannot be carried into a backward class of the new religion. Note: the 3.5% BC (Muslim) internal quota itself was NOT struck down; it continues. The case arose from Sameer Ahamed, who converted in 2015 and sought a 'Muslim Lebbai' community certificate.

Key facts

Verdict	15 Oct 2026 – Supreme Court; Justices P.K. Mishra, Shree Chandrashekhar
Outcome	Tamil Nadu's SLP dismissed; HC judgment upheld
Order quashed	G.O.(Ms) No. 31, 9 Mar 2024 – BC(M) certificates for converts
High Court	Madurai Bench, 25 Jun 2026 – Justices G.R. Swaminathan, P.B. Balaji
3.5% quota	2007 Act; within BC 30% – continues (not struck down)
BC(M) groups	Ansar, Dekkani Muslims, Dudekula, Labbai (Rowther, Marakayar), Mappilla, Sheik, Syed

Background

- Constitution: Article 15(4) – special provisions for socially and educationally backward classes and SC/ST (First Amendment, 1951, following Madras State's 'Champakam Dorairajan' case). Article 16(4) – reservation in public posts for backward classes. Article 340 – President may appoint a Backward Classes Commission. Article 342A – 102nd Amendment (2018); the 105th Amendment (2021) restored States' power to prepare their own lists.
- Case law: Indra Sawhney (Mandal, 1992) – 50% ceiling, creamy-layer exclusion. Constitution (Scheduled Castes) Order, 1950 – only Hindus, Sikhs (1956) and Buddhists (1990) can be SC. Vanniyar 10.5% internal quota (2021 Act) – struck down by the Supreme Court on 31 March 2022.
- Tamil Nadu's 69%: BC 26.5% + BC (Muslim) 3.5% + MBC/DNC 20% + SC 18% (incl. 3% preferential for Arunthathiyar) + ST 1% = 69%. The 1993 Act (Act 45 of 1994) was placed in the Ninth Schedule by the 76th Amendment (1994). The 3.5% BC(M) quota comes from the Tamil Nadu Backward Class Christians and Backward Class Muslims (Reservation) Act, 2007.
- Tamil Nadu BC Commissions: first – A.N. Sattanathan (1969; report 1970); second – J.A. Ambasankar (1982; report 1985). The Justice Party government's 1921 'Communal G.O.' was among India's earliest communal-reservation orders.

Tamil Nadu link: the case is entirely from Tamil Nadu – the G.O. was the State's, the judgment came from the Madurai Bench of the Madras High Court (set up in 2004). Despite the Mandal 50% ceiling, Tamil Nadu continues 69% reservation with Ninth Schedule protection.

15 Internet access a fundamental right for everyone, including children (Art. 21 with 19(1)(a)) – Supreme Court

Judiciary

News

On 15 Oct 2026 the Supreme Court held that the right to access and use the internet is a fundamental right of every individual, including children – under Article 21 (life and personal liberty) read with Article 19(1)(a) (speech and expression). Bench: Justices J.B. Pardiwala and K. Vinod Chandran. The ruling came on applications by the NGO Just Rights for Children Alliance on Child Sexual Exploitation and Abuse Material (CSEAM). Blanket restrictions such as age-based social-media bans are disproportionate; protection must target harmful content and those who spread it. It suggested safeguards like parental consent, a 'child mode' and private-by-default accounts, and ordered a National Hash and URL Database for CSEAM; next hearing 10 Dec 2026.

Key facts

Ruling	15 Oct 2026 – Justices J.B. Pardiwala, K. Vinod Chandran
Basis	Article 21 read with Article 19(1)(a)
Petitioner	Just Rights for Children Alliance (CSEAM case, follow-up to 2024 judgment)
Rejected	Blanket age-based social-media bans for children
Directions	National CSEAM Hash & URL database; monthly compliance reports; digital safety in NCERT curriculum
Next hearing	10 Dec 2026

Background

- Evolution of case law: Faheema Shirin v. State of Kerala (Kerala HC, 2019) – internet access is part of the right to education and privacy (Art. 21). Anuradha Bhasin v. Union of India (2020, J&K internet shutdown) – speech and trade through the internet are protected under Art. 19(1)(a) and 19(1)(g); indefinite shutdowns not allowed. Pragya Prasun (2025) – digital access is an intrinsic part of Art. 21.
- Right to education: Article 21A – free and compulsory education for children aged 6–14 (86th Amendment, 2002); RTE Act 2009 (in force from 1 April 2010). Digital Personal Data Protection (DPDP) Act, 2023 – a person below 18 is a 'child'; processing their data requires verifiable parental consent; Data Protection Board of India.
- Cyber laws: IT Act 2000, Section 79 – 'safe harbour' for intermediaries, lost if due diligence is not followed. POCSO Act 2012 – protection of children from sexual offences. In its 23 Sept 2024 judgment the Supreme Court advised using 'CSEAM' instead of 'child pornography'.

Tamil Nadu link: 'Kalvi Tholaikkatchi' (Kalvi TV), the School Education Department's education channel for Classes 1–12 (with SCERT content), was launched by CM Edappadi K. Palaniswami on 26 Aug 2019. During COVID it carried lessons to students without internet access.

16 FSSAI draft rule bans adding sucrose and fructose to products for infants up to 6 months

Food Safety

News

FSSAI published the draft 'Food Safety and Standards (Foods for Infant Nutrition) Amendment Regulations, 2026' in the Gazette of India on 16 Oct 2026. A proviso will be inserted in Regulation 3(6) of the 2020 regulations: 'sucrose and fructose shall not be added in products intended for infants up to the age of 6 months'. At present lactose and glucose polymers are the preferred carbohydrate sources, and sucrose/fructose are allowed within limits when needed. Though the 2020 regulations cover foods from birth to 24 months, the ban applies only to the 0–6 month group. Public comments – 60 days. Aim: complement exclusive breastfeeding in the first six months and reduce childhood-obesity risk. It is a draft, not yet a final rule.

Key facts

Draft	16 Oct 2026 – Gazette of India
Amends	FSS (Foods for Infant Nutrition) Regulations, 2020 – Reg. 3(6)
Ban	Adding sucrose, fructose to products for infants up to 6 months
Still preferred	Lactose, glucose polymers
Comments	60 days from public availability of the Gazette
2020 rules cover	Birth to 24 months

Background

- Science: sucrose (cane sugar) is a disaccharide of glucose + fructose. Lactose (milk sugar) = glucose + galactose; the main carbohydrate of breast milk. Fructose (fruit sugar) is the sweetest natural sugar. Maltodextrin is a glucose polymer obtained from starch.
- Breastfeeding: WHO (Geneva) and UNICEF recommend exclusive breastfeeding for the first 6 months, then continued breastfeeding with complementary food up to 2 years or beyond. World Breastfeeding Week – 1–7 Aug. India's 'MAA' (Mothers' Absolute Affection) programme – 2016.
- Law: the Infant Milk Substitutes, Feeding Bottles and Infant Foods (Regulation of Production, Supply and Distribution) Act, 1992 (IMS Act; amended 2003) bans advertising and promotion of these products to protect breastfeeding. It is based on WHO's 1981 International Code of Marketing of Breast-milk Substitutes.
- Background: in April 2024 the Swiss NGO Public Eye, with IBFAN, reported that Nestle's 'Cerelac' baby cereal sold in India and other developing countries contained added sugar, unlike in European markets such as Switzerland; FSSAI then began an examination.

Tamil Nadu link: marking World Breastfeeding Week, CM J. Jayalalithaa on 3 Aug 2015 opened, via video-conference, 352 breastfeeding rooms at bus stands across the State and 7 human milk banks in government hospitals at Tiruchirappalli, Madurai, Coimbatore, Theni, Salem, Thanjavur and Egmore.

17 FSSAI proposes new maximum residue limits for acetamiprid and imidacloprid pesticides in tea

Food Safety

News

The Food Safety and Standards Authority of India (FSSAI) published the draft 'Food Safety and Standards (Contaminants, Toxins and Residues) Amendment Regulations, 2026' in the Gazette of India on 16 Oct 2026. It proposes a maximum residue limit (MRL) of 20 mg/kg (20 ppm) for acetamiprid and 50 mg/kg (50 ppm) for imidacloprid in tea. The acetamiprid limit is lower than Japan's (30 ppm) and the USA's (50 ppm); the imidacloprid limit follows international Codex standards. Stakeholders have 60 days to comment; the limits are subject to finalisation.

Key facts

Draft	FSS (Contaminants, Toxins and Residues) Amendment Regulations, 2026 – Gazette, 16 Oct 2026
Acetamiprid	20 mg/kg (Japan 30, USA 50 ppm)
Imidacloprid	50 mg/kg – based on Codex standards
Comments	60 days from notification
Background	CIB&RC approved use on tea (Jan 2026); Tea Board added them to the Plant Protection Code (Apr 2026); small growers sought MRLs
Target pest	Tea mosquito bug (Helopeltis)

Background

- Science: acetamiprid and imidacloprid are 'neonicotinoid' insecticides – chemically similar to nicotine, they act on nicotinic acetylcholine receptors in the insect nervous system and paralyse it. They are systemic (spread inside the plant). They harm bees and other pollinators – so in 2018 the European Union banned outdoor use of imidacloprid, clothianidin and thiamethoxam.
- Law: registration, manufacture and sale of pesticides – Insecticides Act, 1968; registering body – Central Insecticides Board & Registration Committee (CIB&RC), Ministry of Agriculture, Faridabad. Residue limits (MRLs) in food are fixed by FSSAI. The international standard-setter is the Codex Alimentarius Commission (FAO–WHO, 1963).
- Economy: the Tea Board was set up under the Tea Act, 1953; HQ Kolkata; Ministry of Commerce and Industry. India is the world's second-largest tea producer after China; Assam leads. Darjeeling tea was India's first product to get a Geographical Indication (GI) tag.

Tamil Nadu link: the Nilgiris and Valparai (Coimbatore district) are major South Indian tea areas; 'Nilgiri (Orthodox)' tea has a GI tag. The United Planters' Association of Southern India (UPASI, 1893) is headquartered at Coonoor, and its Tea Research Institute (UPASI TRI) is at Valparai. The Tea Board has its South India office at Coonoor. The MRLs matter directly to the Nilgiris, home to many small tea growers.

18 PMAY-Urban 2.0: Centre approves over 1.93 lakh more houses

Welfare Schemes

News

The 10th meeting of the Central Sanctioning and Monitoring Committee (CSMC), held in New Delhi on 16 Oct 2026 and chaired by Satendra Singh, Secretary, Ministry of Housing and Urban Affairs (MoHUA), approved over 1.93 lakh more houses for 11 States under Pradhan Mantri Awas Yojana – Urban 2.0 (PMAY-U 2.0). They include Uttar Pradesh (73,182), Bihar (52,866), Telangana (18,120), West Bengal (16,559) and Gujarat (14,290), under the Beneficiary Led Construction (BLC) and Affordable Housing in Partnership (AHP) verticals. Total PMAY-U 2.0 sanctions now stand at 20.80 lakh houses.

Key facts

Meeting	10th CSMC meeting, 16 Oct 2026, New Delhi
Approved	1.93 lakh+ houses, 11 States (most – UP 73,182; Bihar 52,866); Tamil Nadu not in this list
Total	20.80 lakh houses under PMAY-U 2.0; 97% (20.16 lakh) in women's sole or joint names
Both phases	PMAY-U + 2.0: 1.27 crore+ sanctioned, 1.01 crore completed
Assistance	Up to ₹2.50 lakh per house; EWS / LIG / MIG families with income up to ₹9 lakh a year

Background

- History: PMAY-Urban was launched on 25 June 2015. The Union Cabinet approved PMAY-U 2.0 in Aug 2024 – 1 crore urban poor and middle-class families over 5 years, with central assistance of ₹2.30 lakh crore. It is run by the Ministry of Housing and Urban Affairs (MoHUA). Rural housing is under PMAY-Gramin – Ministry of Rural Development.
- Four verticals: (1) Beneficiary Led Construction (BLC); (2) Affordable Housing in Partnership (AHP); (3) Affordable Rental Housing (ARH) – for migrant workers, students and working women; (4) Interest Subsidy Scheme (ISS) – interest subsidy on home loans.
- Polity: the 74th Amendment (1992) gave urban local bodies 18 functions in the 12th Schedule. Registering houses in women's sole or joint names is a key feature of the scheme.

Tamil Nadu link: Tamil Nadu was not in this round. Urban housing in the State is implemented by the Tamil Nadu Urban Habitat Development Board (TNUHDB; formerly the Slum Clearance Board, 1970). For rural areas, the 'Kalaignar Kanavu Illam' scheme (2024–25 Budget) replaces huts with concrete houses – target 8 lakh houses by 2030; 1 lakh houses in 2024–25 at ₹3.5 lakh each (Rural Development & Panchayat Raj Department).

19 Maharashtra's first 'Annapurti Grain ATM' opens at Nashik Road – beneficiaries get ration at their convenience

Welfare Schemes

News

Maharashtra's first 'Annapurti Grain ATM' was inaugurated at Nashik Road (Gorewadi Road, near the Divisional Commissioner's Office) by State Food and Civil Supplies Minister Chhagan Bhujbal on 17 Oct 2026. Set up by the State with the UN World Food Programme (WFP), it lets beneficiaries – such as workers and migrants who cannot reach fair price shops during fixed hours – collect grain round the clock at their convenience. The next two grain ATMs are planned at Nagpur and Thane.

Key facts

Place	Nashik Road, Nashik district, Maharashtra – State's first grain ATM
Opened by	Minister Chhagan Bhujbal (Food, Civil Supplies & Consumer Protection); 17 Oct 2026
Partner	UN World Food Programme (WFP)
Next	Nagpur, Thane
State PDS	About 54,000 fair price shops; 7–7.5 crore beneficiaries
India's first	Bhubaneswar, Odisha – 9 Aug 2024 (WFP–Odisha Govt); up to 50 kg in 5 minutes

Background

- Annapurti means 'fulfiller of food' in Hindi. It dispenses rice / wheat 24×7 after biometric (Aadhaar) authentication; no under-weighing; waiting time cut by 70%; can run on solar panels. India's first Annapurti – Bhubaneswar (Odisha), 9 Aug 2024; Gujarat's first – Bhavnagar, 17 Sept 2024.
- Law: National Food Security Act (NFSA), 2013 – subsidised grain for up to 75% of the rural and 50% of the urban population; 5 kg per person a month for priority households and 35 kg per family for Antyodaya (AAY). PM Garib Kalyan Anna Yojana (PMGKAY) – free grain for 5 years from 1 Jan 2024 (to 2028). 'One Nation One Ration Card' (ONORC) – ration from any State.
- World Food Programme (WFP): UN agency, 1961; HQ Rome (Italy); won the 2020 Nobel Peace Prize. Geography: Nashik is on the Godavari; one of the four Kumbh Mela sites.

Tamil Nadu link: Tamil Nadu follows a Universal PDS covering all family-card holders. The Tamil Nadu Civil Supplies Corporation (TNCSC) was set up in 1972 for procurement, storage and distribution – Tamil Nadu was the first State to set up such a corporation.

20 Bengaluru-born Ramya Anche to lead NASA's $20 million 'PUFFINS' ultraviolet space telescope mission

Science

News

Dr Ramya Manjunath Anche, assistant research professor at the University of Arizona's Steward Observatory, will lead – as Principal Investigator – the $20 million 'PUFFINS' SmallSat mission selected under NASA's Astrophysics Pioneers programme (reported 16–17 Oct 2026). PUFFINS = 'Polarimetry in the Ultraviolet to Find Features in INterStellar dust'. Its 10-inch (about 25 cm) ultraviolet telescope will measure the polarisation of light from about 70 stars to study interstellar dust grains smaller than 50 nanometres. It will fly in low-Earth orbit, with launch targeted for 2030. Indian partners: IUCAA (Pune) and IIA (Bengaluru).

Key facts

Leader	Dr Ramya Manjunath Anche – University of Arizona, Steward Observatory; grew up in Devanahalli near Bengaluru; enrolled at IIA in 2012 (PhD 2020); moved to the US in 2021
Mission	PUFFINS – SmallSat ultraviolet spectropolarimeter
Programme / cost	NASA Astrophysics Pioneers; $20 million
Science goal	Interstellar dust – its interaction with light and magnetic fields; star and planet formation
Launch	Target 2030; low-Earth orbit
Partners	McDonald Observatory (Texas), IUCAA Pune, IIA Bengaluru, Austrian and Korean institutes

Background

- NASA Pioneers programme: started in 2020; astrophysics missions under a $20 million cap using SmallSats, balloons and ISS payloads; lets early- and mid-career scientists lead a mission for the first time. Its 'Pandora' (exoplanets) launched in Jan 2026.
- Science: Earth's ozone layer absorbs most ultraviolet light, so UV astronomy must be done from space. Interstellar dust scatters, dims (extinction) and polarises starlight; UV spectropolarimetry has not flown in space for nearly three decades.
- NASA: founded in 1958. Hubble (1990, NASA–ESA) – ultraviolet and visible; James Webb (JWST, 2021, NASA–ESA–CSA) – infrared. India's 'AstroSat' (2015) – its first multi-wavelength space observatory, carrying the UVIT ultraviolet telescope.

Tamil Nadu link: the Indian Institute of Astrophysics (IIA, Bengaluru), where Ramya Anche studied (PhD, 2020), runs two observatories in Tamil Nadu – the 'Vainu Bappu Observatory' at Kavalur in the Javadhu Hills (Tirupattur district) and the 'Kodaikanal Solar Observatory' (1899) in Dindigul district. (No direct Tamil Nadu link of hers is verified.)

21 13-year-old Raji Doshi wins 2026 3M Young Scientist Challenge for a solution to ocean acidification

Awards

News

Raji Doshi, a 13-year-old Indian-American eighth-grader from Farmington, Connecticut (USA), won the 'Discovery Education – 3M Young Scientist Challenge 2026', earning the title 'America's Top Young Scientist' and $25,000 (announced 14 Oct 2026). The finals were held on 12–13 Oct at 3M's headquarters in St. Paul, Minnesota. Her 'ALKACORE' system combines macroalgae cultivation with aragonite to raise seawater alkalinity and remove CO_2. Second and third: Aaisha Asif (Florida) and Sharvi Mahajan (California).

Key facts

Winner	Raji Doshi, 13, Grade 8 (Stanford Online school), Farmington, Connecticut
Prize	$25,000 + title 'America's Top Young Scientist'
Invention	ALKACORE – macroalgae + aragonite (calcium carbonate) – raises alkalinity, removes CO_2; computer model for the best aragonite dose
Event	Finals 12–13 Oct, announced 14 Oct 2026; 3M HQ, St. Paul, Minnesota
Organisers	3M and Discovery Education; mentor – 3M engineer Deborah Isabelle
Runners-up	Aaisha Asif (Sarasota, Florida), Sharvi Mahajan (San Diego, California) – $1,000 each

Background

- Science: ocean acidification – when the sea absorbs atmospheric CO_2, $CO_2 + H_2O \rightarrow$ carbonic acid (H_2CO_3), raising hydrogen ions and lowering pH. Average ocean pH, about 8.2 before the Industrial Revolution, is now about 8.1 – still alkaline, but falling.
- Effects: fewer carbonate ions make it harder for corals, oysters, snails and plankton to build calcium carbonate (aragonite / calcite) shells and skeletons. Ocean warming causes coral bleaching – corals expel the 'zooxanthellae' algae living in them.
- Global goal: Sustainable Development Goal 14 (SDG 14 – 'Life Below Water'); target 14.3 – minimise ocean acidification. The UN 'Decade of Ocean Science' is 2021–2030.

Tamil Nadu link: the Gulf of Mannar (between India and Sri Lanka) is rich in coral reefs – the Gulf of Mannar Marine National Park (1986) with 21 islands and the Biosphere Reserve (1989; the first marine biosphere reserve in South and South-East Asia). Acidification and warming threaten these reefs and the seagrass beds that are home to the dugong.

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