

Currently | 28–29 June 2026

- 1. From Seas to Skies, India is Becoming Self-Reliant: Modi – The Hindu | Page 12 | GS-3: Defence & Security**
- 2. New Anaemia Mukht Bharat Norms Seek Early Action – The Hindu | Page 12 | GS-2: Health**
- 3. How Schools Can Tackle Adolescent Malnutrition – The Hindu | Page 7 | GS-2: Health & Education**
- 4. Smart AI Caching Can Keep the Data Flowing When Disaster Strikes – The Hindu | Science Page | GS-3: Science & Technology | Disaster Management**
- 5. Prime Minister’s State Visit to Seychelles – PIB | GS-2: International Relations**
- 6. How Saving Elephants Helps Forests Breathe Easier – The Hindu (Sunday) | GS-3: Environment & Biodiversity**

From seas to skies, India is becoming self-reliant: Modi

PM highlights indigenously built missile systems, says June was a 'landmark month' for India's defence sector; he thanks people for responding to his call for austerity amid the West Asia crisis

Saurabh Trivedi
NEW DELHI

Prime Minister Narendra Modi on Sunday hailed India's growing self-reliance in defence manufacturing, pointing to the maiden flight of the first made-in-India C-295 transport aircraft and the successful test of the indigenous Long-Range Land-Attack Cruise Missile (LRLACM). He also thanked citizens for supporting his appeal for austerity amid the West Asia crisis.

Addressing the nation in his monthly radio programme *Mann Ki Baat*, Mr. Modi said June had been a "landmark month" for India's aviation and defence sectors.

'Indigenous' industry
Referring to the C-295 programme, he said 40 aircraft are being manufactured in India, giving a major boost to the country's MSMEs and aerospace industry while creating employment opportunities.

The first C-295 transport aircraft manufactured in India completed its maiden flight on June

As many as 40 such aircraft [C-295] are being built right here in India and this is giving new strength to MSMEs and the aerospace sector ... From the seas to the skies, our India is becoming increasingly secure and self-reliant

NARENDRA MODI
Prime Minister



10. The Indian Air Force is procuring 56 aircraft under a ₹21,935-crore deal, with 40 being manufactured by Tata Advanced Systems Limited in partnership with Airbus at a facility in Gujarat's Vadodara.

The Prime Minister cited the successful flight-test of the indigenous LRLACM conducted by the Defence Research and Development Organisation earlier this month.

"From the seas to the skies, our India is becoming increasingly secure and self-reliant," he said, adding that all major subsystems of the missile had been indigenously developed.

Mr. Modi referred to the recent induction of *INS Durgam*, *INS Shanshak*, and

INS Agra into the Indian Navy, saying the warships were designed and built entirely in India.

West Asia conflict

The Prime Minister thanked citizens for responding positively to his appeal for conserving resources amid the conflict in West Asia. He said many people had begun carpooling, using public transport, postponing foreign travel and increasing the use of natural fertilizers. He noted that several families had decided to recycle old gold instead of buying new jewellery for weddings.

"I am grateful to every citizen of the country; not only have they supported my appeal, they are also actively cooperating in ev-

The PM praised Nagaland's 'Baby League' football initiative for children aged 5 to 12

ery way," he said.

Highlighting environmental conservation, Mr. Modi praised the efforts of biologist Purinima Devi Barman in changing public perceptions about Assam's *hargila* bird (greater adjutant) and lauded community initiatives in Meghalaya to preserve the State's living root bridges, for which India has sought UNESCO World Heritage status.

The Prime Minister commended women in Madhya Pradesh's Rajgarh district for converting plastic waste into eco-bricks used for beautifying public spaces and praised Nagaland's 'Baby League' football initiative for children aged five to 12.

For Ganesh Chaturthi, Mr. Modi urged people to purchase idols crafted by Indian artisans, calling on buyers to check the both the material used and the country of manufacture before making their purchase.

Sanskrit University introduces B.Tech. in AI and data science

The Hindu Bureau
NEW DELHI

In the first instance of a Sanskrit university in India entering engineering education, the Central Sanskrit University has introduced a B.Tech. programme in artificial intelligence and data science from 2026-27.

Prime Minister Narendra Modi, in his *Mann Ki Baat* address on Sunday, said this was a significant effort to prepare the youth for new technology while keeping them rooted in their heritage.

The B.Tech. programme, on lines of the National Education Policy, 2020, is designed to transform Sanskrit institutions into multi-disciplinary centres of learning. The programme is AICTE-approved and has a total sanctioned intake of 66 seats: 60 regular seats and six supernumerary ones.

AI tools in Sanskrit

The programme is expected to support development of AI-enabled tools for Sanskrit and Indian languages, strengthen language technologies, enable digitisation and preservation of classical texts and promote inter-disciplinary research linking AI with Indian Knowledge Systems.

"This marks a crucial step towards integrating modern technology with India's traditional knowledge. It will facilitate the development of new AI tools for Indian languages and accelerate the digitisation and preservation of our ancient texts and manuscripts," the Prime Minister said.

Traditional domains

The programme will also provide opportunities to apply modern computational techniques to traditional domains such as Ayurveda, Yoga, Jyotisha, Nyaya, and other classical disciplines.

The technical components of the programme include artificial intelligence, machine learning, data science, python programming, statistics, cloud computing, data analytics and deep learning, an official spokesperson of the Education Ministry said.

The language and knowledge system components include natural language processing, computational linguistics, machine translation, speech recognition, conversational AI, language technologies, knowledge representation and optical character recognition (OCR) for ancient manuscripts.

In a particular region in India, the local people train the roots of living trees into robust bridges across the streams. As the time passes, these bridges become stronger. These unique 'living root bridges' are found in

- (a) Meghalaya
- (b) Himachal Pradesh
- (c) Jharkhand
- (d) Tamil Nadu

1. Defence (GS-3)

Context : PM highlighted June 2026 as a landmark month for defence indigenisation.

- I. **C-295**: First Made-in-India transport aircraft completed maiden flight; 40/56 aircraft to be manufactured in India (Tata-Airbus).
- II. **Long-Range Land Attack Cruise Missile (LRLACM)**: Defence Research and Development Organisation (DRDO) successfully flight-tested the indigenous missile.
- III. **Indian Navy**: INS Arnala, INS Nistar & INS Agray inducted.

2. Environment (GS-3)

Context : PM highlighted community-led conservation initiatives.

- I. **Purnima Devi Barman**: Led the Hargila Army, changing public perception of the Greater Adjutant Stork through women-led conservation.
- II. **Meghalaya**: Community conservation of Living Root Bridges; nominated for United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage status.
- III. **Rajgarh (M.P.)**: Plastic waste converted into eco-bricks.

GS-4 Example: Purnima Devi Barman → Behavioural Change • Attitudinal Change • Community Leadership.

3. Children (GS-2)

Context : PM praised Nagaland's Baby League.

- I. Football programme for children 5–12 years.
- II. Promotes fitness, discipline and grassroots talent.

4. Sanskrit University & AI (GS-3)

Context : Central Sanskrit University launched India's first Bachelor of Technology (B.Tech.) in Artificial Intelligence (AI) & Data Science (2026–27).

- I. All India Council for Technical Education (AICTE)-approved; 66 seats.
- II. Integrates Artificial Intelligence (AI), Machine Learning (ML), Natural Language Processing (NLP) and Indian Knowledge Systems (IKS).

New Anaemia Mukht Bharat norms seek early action

Bindu Shajan Perappadan

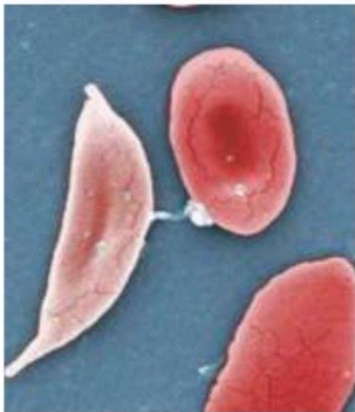
NEW DELHI

The Union Health Ministry is set to launch revised operational guidelines for the Anaemia Mukht Bharat Abhiyaan (AMB) on Monday, expanding the national programme's strategy to include a new beneficiary group, greater emphasis on dietary interventions, and digital tracking of beneficiaries.

The guidelines, to be released by Union Health Minister J.P. Nadda during the 16th meeting of the Central Council of Health and Family Welfare at Vigyan Bhawan in Delhi, mark the transition of the programme from Anaemia Mukht Bharat to Anaemia Mukht Bharat Abhiyaan.

New framework

The revised framework seeks to strengthen anaemia control through im-



Treat and track: The Ministry proposed a digital ecosystem to monitor anaemia services.

proved testing, treatment, monitoring and community participation.

The revised programme adds low birth weight babies (0-6 months) as a seventh beneficiary group, recognising the need for early intervention.

A new "eating right" component has been introduced as the seventh intervention to promote the regular consumption of iron-rich and diversified

diets. The seventh institutional mechanism focuses on strengthening monitoring and evaluation through digital tracking. The guidelines also replace the existing T3 with a T4 strategy of Test, Treat, Talk, and Track, which emphasises routine haemoglobin testing, treatment according to national anaemia management protocols, systematic tracking of beneficiaries for referral and follow-up, and counselling on healthy dietary practices.

The Ministry has also proposed an integrated digital ecosystem for monitoring anaemia services.

The National Family Health Survey (NFHS-5) shows that 67.1% of children aged six to 59 months, 57% of women aged 15 to 49 years, 52.2% of pregnant women, and 59.1% of adolescent girls aged 15 to 19 years are anaemic.

Consider the following statements in the context of interventions being undertaken under **Anaemia Mukta Bharat Strategy** :

1. It provides prophylactic calcium supplementation for pre-school children, adolescents and pregnant women.
2. It runs a campaign for delayed cord clamping at the time of child-birth.
3. It provides for periodic deworming to children and adolescents.
4. It addresses non-nutritional causes of anaemia in endemic pockets with special focus on malaria, hemoglobinopathies and fluorosis.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

1. (GS-2: Health)

Context :The Union Ministry of Health & Family Welfare has revised the **Anaemia Mukta Bharat (AMB)** guidelines to strengthen early detection, treatment, nutrition counselling and digital monitoring of anaemia.

2. Anaemia Mukta Bharat (AMB)

I. **About**: Launched in 2018 under POSHAN Abhiyaan to reduce anaemia through a life-cycle approach.

II. Revised Guidelines:

* **New beneficiary**: Low Birth Weight (0–6 months) infants.

* **T3 → T4**: Test (haemoglobin screening) → Treat (protocol-based treatment) → Talk (nutrition & dietary counselling) → Track (digital follow-up).

* **Greater focus on iron-rich diversified diets, early intervention and digital beneficiary tracking.**

3. National Family Health Survey-5 (NFHS-5)

Life-cycle Burden of Anaemia

I. Children (6–59 months): 67.1%

II. Adolescent Girls (15–19 years): 59.1%

III. Women (15–49 years): 57.0%

IV. Pregnant Women: 52.2%

How schools can tackle adolescent malnutrition

As schools across the country reopened after summer vacation, classrooms were filled once again with the energy, aspirations and anxieties of millions of adolescents. Yet hidden behind their growing ambitions lies a silent public health emergency – adolescent malnutrition. The recently released NFHS-6 (2023-24) findings are stark. Obesity among women aged 15-49 years has risen from 24% to 30.7%, and among men from 22.9% to 27.3%. High blood sugar among men aged 15 and above jumped from 15.6% to 20.9%, and among women from 13.5% to 17.8%. What is most alarming is that lifestyle changes once associated with cities and affluent communities such as sedentary behaviour, processed diets, stress and rising obesity, are now affecting rural populations too. India faces a double burden: undernutrition among children and surging obesity among adults, with obesity driving diabetes, heart disease and stroke. These crises do not begin in adulthood. Their roots lie in adolescence, making schools the most critical setting for prevention.

Addressing diets differently

Schools must recognise that malnutrition is no longer only about thinness. India is witnessing the 'thin-fat' phenotype – children who appear lean yet carry dangerous metabolic risk. According to the Comprehensive National Nutrition Survey (CNNS, 2019), 27.4% of Indian adolescents are stunted. At the same time, obesity is rising, particularly among the urban youth. More strikingly, 35% of children under five are stunted yet carry adult-level triglycerides, which is like a metabolic time bomb associated with adult-onset diabetes and cardiovascular disease. Preventing these diseases must begin in school, not in hospitals decades later.

Studies on Delhi school adolescents confirmed that the



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Bharati Kulkarni

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Schools are not merely educational institutions; they have the potential to be powerful public health promoting institutions

consumption of milk and dairy products, green leafy vegetables and fruits is lower than what is recommended. Far too many children consume cereal-heavy diets while proteins and protective foods remain woefully inadequate. Schools can address this through improved midday meals, healthier canteens and food demonstrations that teach students how to build balanced plates. The Dietary Guidelines for Indians 2024 recommend that half the plate by volume should consist of fruits and vegetables. Yet research confirms that sedentary and screen-heavy behaviours are inversely associated with daily fruit and vegetable intake – a dangerous compounding effect. School gardens, fruit breaks, and local seasonal produce can normalise healthier eating habits.

Addressing sugar and UPFs

Moreover, the bitter truth about sugar has to be revealed. Sugary drinks, High fat sugar and salt (HFSS) foods, and Ultra-Processed Foods (UPFs) are rapidly replacing traditional foods. Studies highlight alarming trends in free sugar and UPF consumption among Indian adolescents. A recent World Health Organization study has revealed that UPF consumption in India has been surging at more than 13.7% year-after-year. The bitter truth is that the excess sugar consumed today becomes a metabolic risk tomorrow. Schools must actively discourage sugary beverages and display sugar boards showing hidden sugar content. Reinforcement, not one-time campaigns, converts knowledge into practice.

Physical inactivity must be treated as seriously as poor diet. Schools should guarantee structured physical activity and sports as core educational components, not optional extras. This is especially urgent as urban lifestyle habits such as reduced movement, changing diets, and rising obesity are now affecting rural communities too, making inactivity a nationwide epidemic, not only city schools' problem.

Thus, among the most common risk factors for non-communicable diseases in children and adolescents are unhealthy diets and insufficient physical activity. The rapid rise of adolescent obesity increases the risk of early-onset Type 2 diabetes, hypertension and heart disease, and will lead to substantially greater healthcare spending. UPF-free school zones must become a national movement backed by consistent policy.

Schools advancing public health

It is here that the Let's Fix Our Food (LFOF) initiative offers a compelling direction. Led by the Indian Council of Medical Research-National Institute of Nutrition (ICMR-NIN), the LFOF consortium is a multi-stakeholder initiative working to create healthier food environments for adolescents by advancing evidence-based policy, empowering youth through nutrition literacy, and campaigning for regulatory frameworks. Its outputs include recommendations for regulating HFSS food advertising, taxation on unhealthy beverages, a model school nutrition curriculum and a food label reading kit.

A 2025 *Lancet* study projected that 21.8 crore men and 23.1 crore women in India will be overweight by 2050, with the steepest rise expected among adolescents and young adults aged 15-24 years.

Schools must move beyond textbook nutrition education and adopt skill-based approaches such as reading food labels, recognising portion sizes, understanding marketing tactics, and basic cooking. Schools are not merely educational institutions; they have the potential to be powerful public health promoting institutions. School-based interventions in India have demonstrated measurable improvements in dietary behaviour and reductions in sugary beverage consumption. A child protected from unhealthy diets today is far less likely to become a patient tomorrow.

1. GS-2: Health | Education

Context : Rising adolescent malnutrition and obesity call for school-based interventions to promote healthy dietary habits and prevent future lifestyle diseases.

2. Adolescent Malnutrition

I. **Meaning**: Malnutrition among 10–19 years includes undernutrition (stunting, anaemia, micronutrient deficiency) and overnutrition (overweight/obesity).

II. **Double Burden**: Coexistence of undernutrition with rising obesity, increasing Type-2 Diabetes, Hypertension and Cardiovascular Diseases (CVDs).

III. **Why Schools?** Most effective platform for lifelong nutrition, healthy food habits and physical activity.

3. Key Data

I. **Comprehensive National Nutrition Survey (CNNS), 2019**: 27.4% adolescents are stunted.

II. **National Family Health Survey-6 (NFHS-6), 2023–24**:

* **Obesity**: Women 24% → 30.7% | Men 22.9% → 27.3%

* **High Blood Sugar**: Women 13.5% → 17.8% | Men 15.6% → 20.9%

III. **World Health Organization (WHO)**: Ultra-Processed Food (UPF) consumption in India is increasing by >13.7% annually.

IV. **Lancet (2025)**: By 2050, Women: 23.1 crore | Men: 21.8 crore projected to be overweight.

4. Way Forward

I. Integrate nutrition education into the school curriculum.

II. Ensure healthy school meals and restrict High Fat, Sugar and Salt (HFSS)/Ultra-Processed Foods (UPFs) in and around schools.

III. Promote daily physical activity and sports as part of school routine.

IV. Regular BMI, nutrition screening and counselling with active parental participation.

UPSC Mains Question

“The double burden of adolescent malnutrition threatens India’s demographic dividend. Discuss the role of schools in promoting nutrition, healthy lifestyles and preventive healthcare.” (10 Marks, 150 Words)

Smart AI caching can keep the data flowing when disaster strikes

In cooperative caching, different parts of a disaster-response network, including satellites, drones, base stations, and emergency vehicles, work together to store and share useful data; when one node receives or generates important content, such as satellite images or video, nearby nodes may also cache copies based on demand

Shamim Haque Mondal

Two years ago, Mundakkai and Churalmala in Kerala experienced powerful landslides that killed hundreds of people. Last year, a large village in DharaI, Uttarakhand, was washed away following heavy rain. In the monsoon season of 2025, the States in Northeast India were devastated by frequent floods. More than a hundred people lost their lives after heavy rain in Uttar Pradesh on May 13-14 this year.

During such disasters, it is common for telecom towers to topple over, power lines to be cut, and roads to be closed. In these situations, real-time information as to what is happening on the ground, where people are stuck, which routes are still open, etc. becomes crucial for rescue workers and medical workers. In the absence of such communication, rescue operations are delayed, more property is damaged, and more lives are lost.

Cooperative caching

'Solving' communications in disaster-affected areas is a long-standing problem. Recently, in a paper published in the *IEEE Transactions on Services Computing*, researchers from Ireland, led by Sangita Dhara of Trinity College Dublin, presented a novel approach – a way to transmit important real-time information using a technology called collaborative caching even if the local network is in a subpar condition.

At a time of disaster, the local administration typically has three main communication channels: satellite or satellite-based communications, drones or unmanned aerial vehicles, and some *ad hoc* network based on the ground. A satellite can beam data down over a wide area, so accessing that signal is relatively easy, but the big problem here is data latency, i.e. the delay in getting information. Time is of the essence. It is also possible to take pictures from the sky or transmit live video using drones. However, they are limited by their short range, limited battery capacity, and, above all, obstacles in the form of inclement weather. Finally, ground-based wireless networks can help with local communication – but they are often damaged or non-functional during disasters.

In this context, the researchers have presented cooperative caching. Here, different parts of a disaster-response network, including satellites, drones, base stations, and emergency vehicles, work together to store and share useful data. When one node receives or generates important content, such as satellite images or video, nearby nodes may also cache copies based on the demand. This cooperation allows rescue teams to



During disasters, real-time information about where people need help and which routes are still open is crucial for rescue and medical workers. REUTERS

retrieve information from the nearest available source rather than a distant origin, reducing delay, improving reliability when infrastructure is damaged, and increasing the chance that critical information is available in real time.

Automatic decision-making

Creating this caching system is technologically not simple, however. The drones are airborne, rescue vehicles are on the road, and the position of satellites is constantly changing. It is also difficult to know when and where information will be required, plus the storage of each device will be limited.

To address this problem, the researchers developed a statistical model called **contextual multi-armed bandit (CMAB)**, an AI model that optimises caching decisions quickly.

The model learns from each of the previous decisions, then reviews three factors: what data are recently available, what data demand is currently high, and how much memory is needed in the cache.

For example, it would be helpful to understand that a photo taken 10 minutes before a flood is more effective than a photo taken one hour before the flood. Similarly, video footage or a map of a place that most rescuers are asking for is more important than those that fewer ones are looking for. Sometimes, instead of caching high-resolution video – such as 4K video – short text alerts or warning messages could help rescuers remain

The researchers developed a statistical model called contextual multi-armed bandit, an AI model that optimised caching decisions quickly

productive without taking up large amounts of storage. The model is taught to make such decisions automatically.

Federated learning

While in CMAB each node learns from what information it alone has, a more advanced version called FMAB – short for federated multi-armed bandit – learns from its information as well as what the nodes nearby have learnt.

"Caching decisions are executed periodically rather than per request, amortising the computational cost," the researchers wrote in their paper. "Even the highest observed decision latency of Contextual MAB [around 87 microseconds] remains negligible compared to network delays, ensuring system complexity does not hinder the practical applicability for dynamic and real-time, post-disaster deployments."

The work also highlights the importance of a three-tier network, where space, air, and ground are working together, called Space Air Ground Integrated Network (SAGIN). Here, each layer plays a unique role, but the limitations that exist between them are greatly reduced due to caching, and the system becomes more efficient. In the

post-disaster scenario, it is important not to look at all the information that is available but only at which information is more useful. An updated road map can tell us which bridges are still usable while a live video can let us know that boats are urgently needed in a specific part of the floodplain.

All together

As a result, content should be seen not only as data but as time-dependent actionable data. And the goal of advanced caching should be to learn how to store the most valuable information in the most appropriate places with limited resources.

To meet this goal, SAGIN works to build external infrastructure. CMAB helps to make acceptable decisions, and FMAB can make the network stronger in the post-disaster period by spreading those decisions across multiple nodes.

However, the results of this simulation-based study depend on many parameters, such as the weather at the time, the flight of the drone, energy management, hardware malfunctions, cyber security, and the behaviour of rescuers in reality.

Moreover, it is not always technically possible to determine which content is valuable or preferable. In many cases, the needs of the local administration or humanitarian considerations can also speed up the rescue.

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THE GIST

It is common for communication to get disrupted when a disaster occurs. The absence of real-time information delays rescue operations

Researchers from Ireland found a way to transmit important real-time information using a technology called collaborative caching even if the local network is in a subpar condition

The work also highlights the importance of a three-tier network, where space, air, and ground are working together, called Space Air Ground Integrated Network (SAGIN)

1. **GS-3: Science & Technology | Disaster Management**

Context :Researchers have developed an Artificial Intelligence (AI)-enabled Cooperative Caching system to maintain real-time communication during disasters.

2. **Communication Challenges During Disasters**

I. **Space (Satellites)**: High latency (delay) and limited bandwidth.

II. **Air (Drones)**: Short battery life, limited range and payload.

III. **Ground Networks**: Telecom towers, fibre cables and power supply are often damaged.

IV. **Impact**: Delayed rescue, poor coordination and lack of real-time situational awareness.

3. **AI-Enabled Cooperative Caching**

I. **What is it?** Instead of repeatedly downloading data from distant servers, satellites, drones, base stations and emergency vehicles locally store (cache) and share critical information.

II. **Role of AI**: AI decides what information should be stored, where it should be stored and when it should be updated, based on demand, available storage and network conditions.

III. **AI Models Used**:

* **Contextual Multi-Armed Bandit (CMAB)**: Selects the most useful data for each location.

* **Federated Multi-Armed Bandit (FMAB)**: Enables devices to learn from each other without sending all raw data.

IV. **Network Used**: Space-Air-Ground Integrated Network (SAGIN) integrates satellites, drones and terrestrial networks into one resilient communication system.

4. **Significance**

I. Faster access to maps, satellite images and rescue alerts.

II. Maintains communication even if one network fails.

III. Reduces bandwidth use and communication delay.

IV. Improves disaster response, search & rescue and emergency healthcare.



Prime Minister honoured with ‘Guardian of the Blue Horizon’ Presidential Distinction

Posted On: 28 JUN 2026 3:07PM by PIB Delhi

At a special ceremony, Prime Minister Shri Narendra Modi was today conferred with a Presidential Distinction - ‘Guardian of the Blue Horizon’ by the President of Seychelles, H.E. Dr. Patrick Herminie. The honour has been conferred upon Prime Minister for his green leadership, and efforts towards advancing the interests of developing countries and his longstanding commitment towards promoting the Blue Economy, climate action, sustainable management of ocean resources, and the developmental aspirations of Small Island Developing States. This is the first time that this distinguished honour has been bestowed.

Prime Minister dedicated the honour to all the countries who are committed to environmental conservation and fighting climate change. He underlined that the recognition, at a time when both countries are celebrating 50 years of their diplomatic relations, would go a long way in further enhancing the special friendship. The honour acknowledges Prime Minister’s longstanding commitment towards a greener planet, including the International Solar Alliance, Mission LiFE (Lifestyle for Environment), Ek Ped Maa Ke Naam (Plant for Mother), International Big Cat Alliance, among others. This recognition is the latest in a series of such honours bestowed upon Prime Minister for promoting sustainable development, including the Agricola Medal by FAO, Seoul Peace Prize and the UN Champion of the Earth Award.

The honour underscores the importance attached by Seychelles to India’s growing role as a trusted partner in supporting capacity building, environmental action, sustainable development initiatives, and advancing shared priorities across the Indian Ocean Region.

List of Outcomes: State Visit of Prime Minister to Seychelles

Posted On: 28 JUN 2026 8:17PM by PIB Delhi

1. Development Assistance

Sl. No.	Title
1.	Gift of one Fast Patrol Vessel to the Government of Seychelles
2.	Handover of 10 utility vehicles and 5 sets of Laser Radial class boats to the Seychelles Defence Force
3.	Handover of 6 ambulances to the Government of Seychelles
4.	Handover of 500 MT of rice to the Government of Seychelles
5.	Handover of 8500 MT of cement to the Government of Seychelles

2. Announcements

Sl. No.	Title
1.	Launch of commemorative logo marking 50 years of diplomatic relations between India and Seychelles
2.	Virtual ground-breaking ceremony for the Professional and Technical Education Centre
3.	Completion of Refit of PS Zoroaster for Seychelles Coast Guard
4.	Upgradation of a Dornier Aircraft with Glass Cockpit
5.	Seychelles joins the Coalition for Disaster Resilient Infrastructure (CDRI)

3. Signing/Renewal of MoUs

Sl. No.	Title	Brief Description
1.	Memorandum of Understanding between Sushma Swaraj Institute of Foreign Service (SSIFS) and Ministry of Foreign Affairs and the Diaspora (MoFAD) of the Republic of Seychelles	The MoU enables institutional cooperation between MoFAD, Seychelles and SSIFS through exchanges, training programmes and capacity building.
2.	Memorandum of Understanding between National Payments Corporation of India (NPCI) International Payments Ltd. and Central Bank of Seychelles	The MoU will facilitate the deployment of UPI digital payment infrastructure in Seychelles, and identify avenues for broader collaboration in payments ecosystem.
3.	Agreement between M/s HLL Lifecare Limited and the Ministry of Health of the Republic of Seychelles under the Janaushadhi Scheme	The Agreement will facilitate the export of affordable generic medicines and medical supplies from India to Seychelles under the Janaushadhi Scheme
4.	Memorandum of Understanding between Indian Council of Agricultural Research (ICAR), Republic of India and the Agriculture Department, Ministry of Fisheries, Agriculture and Blue Economy, Republic of Seychelles for Cooperation in Agriculture Research and Education and Work Plan for 2026-2031.	The MoU and the Work Plan aim to develop, promote and accelerate close collaboration between ICAR and Seychelles Agriculture Department in areas of joint research, training and technical study.
5.	Extradition Treaty between the Republic of India and the Republic of Seychelles	The Treaty aims to strengthen bilateral cooperation in combating transnational crime and enhancing the legal framework for extradition of fugitives between the two countries.
6.	Memorandum of Understanding between the Ministry of Transport, Ports and Civil Aviation of the Republic of Seychelles and the Ministry of Ports, Shipping and Waterways of the Republic of India on the Recognition of Training and Certification of Seafarers for Service on Seychelles Flagged Vessels.	The MoU facilitates recognition of Indian seafarers' training and certification for service on Seychelles-flagged vessels.

Western Indian Ocean



1. GS-2: International Relations

Context :During his State Visit to Seychelles, the Prime Minister was conferred the “Guardian of the Blue Horizon” Presidential Distinction by President Dr. Patrick Herminie for advancing the Blue Economy, climate action, sustainable ocean governance and the interests of Small Island Developing States (SIDS). It is the first conferment of this honour.

2. Seychelles: Basic Profile

- I. An island nation in the Western Indian Ocean, off the east coast of Africa; member of the African Union (AU) and the Indian Ocean Commission (IOC).
- II. Comprises 115 islands (43 granitic Inner Islands and 72 coralline Outer Islands).
- III. Capital: Victoria | Largest Island: Mahé | Other major islands: Praslin and La Digue.
- IV. A former British colony, Seychelles attained independence in 1976.

3. India–Seychelles Relations

- I. **Strategic Importance**: Located near key Sea Lines of Communication (SLOCs), Seychelles is a vital maritime partner under India’s MAHASAGAR (Mutual and Holistic Advancement for Security and Growth Across Regions) vision in the Indian Ocean Region (IOR).
- II. **Milestone**: 2026 marks 50 years of diplomatic relations.

III. Key Memoranda of Understanding (MoUs)

- A. **National Payments Corporation of India (NPCI) International**: Unified Payments Interface (UPI) deployment.
- B. **Indian Council of Agricultural Research (ICAR)**: Agriculture & Blue Economy cooperation.
- C. **Health**: Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP) medicines.
- D. **Space**: Satellite applications & capacity building.
- E. **Extradition Treaty & Seafarer certification**.
- F. **Export-Import Bank of India (EXIM Bank)**: Line of Credit; National Hospital & diplomatic training.

5. Challenges

- I. **Growing Chinese presence** in the Indian Ocean Region (IOR).
- II. **Piracy, Illegal, Unreported and Unregulated (IUU) fishing** and maritime crime.
- III. **Climate vulnerability** of Small Island Developing States (SIDS).
- IV. **Limited trade, investment and connectivity**.

6. Way Forward

- I. Deepen maritime security and Maritime Domain Awareness (MDA).
- II. Expand Digital Public Infrastructure (DPI) through UPI and fintech.
- III. Enhance Blue Economy, climate resilience and disaster cooperation.
- IV. Strengthen trade, tourism, healthcare and capacity building.

How saving elephants helps forests breathe easier

Rahul Karmakar

GUWAHATI

Protecting the **endangered** Asiatic elephant (*Elephas maximus indicus*) indirectly helps safeguard India's forests as powerful carbon stores, a new scientific study has said.

The research, however, warned that long-term carbon stabilisation cannot be ensured merely by declaring more areas as elephant reserves but by improving habitat quality, restoring wildlife corridors, and strengthening forest management. Carbon stabilisation, a vital mechanism for removing greenhouse gases and mitigating climate change, is the process of trapping atmospheric carbon and locking it into stable, solid forms (such as in soil or organic matter). This helps resist decay, erosion, or the release of carbon back into the atmosphere.

The study, published in the latest issue of the *Journal of Threatened Taxa*, assessed the relationship between elephant conservation efforts, the expansion of elephant reserves, and wildlife-associated carbon stock enhancement in India from 1992 to 2025. Noida-based Amity University's Tarun Kathula and Tanu Jindal are its authors.

The researchers found that India's elephant reserve network expanded from 18,297 sq. km. (across three elephant reserves) to 80,777 sq. km. (33 elephant reserves), while the elephant population increased by about 6.7% from 25,604 estimated during 1992-93. Despite the marginal increase in the number of pachyderms, the estimated carbon stored within the elephant reserves increased by 38%.

The increase should not be interpreted as the ele-



Elephants remain ecologically vital, despite their limited contribution to faunal biomass, the researchers said. THULASI KAKKAT

phants directly creating more forest biomass, the researchers said, as it "primarily reflects enhanced protection and reduced degradation of pre-existing forest carbon stocks."

The study estimated that about 95% of the increase in carbon storage resulted from the expansion of protected forest areas. However, elephant reserves are not uniformly conserved in the same

manner as legally designated national parks or tiger reserves.

Ecosystem engineers

Elephants, often described as ecosystem engineers, remain ecologically vital, despite their limited contribution to faunal biomass, the researchers said. The gentle giants, they pointed out, disperse seeds, enrich soils with dung, create space for di-

verse vegetation, and help maintain healthy forests capable of storing carbon over the long term.

The researchers also found a weak relationship between the number of elephant reserves and the elephant population growth, suggesting that administrative declarations alone cannot secure the species' future if habitats remain fragmented or poorly managed.

Declining numbers

The study further underlined a worrying trend – the decline in elephant numbers under a new census methodology called Synchronised All-India Elephant Estimate (SAIEE) 2021-25, while the number of elephant reserves has stabilised. The SAIEE 2021-25, while the number of elephant reserves has stabilised. The SAIEE count of 22,446 was 4,065 elephants fewer than the 2017 estimate, but the enumerators asserted that the two different counting

methods should not be compared.

Comparable patterns were observed in the African savannah ecosystems, where mega-herbivore management improved vegetation carbon stocks by 20-30%. "Such consistency across regions supports the ecological principle that mega-fauna protection complements forest-carbon goals," their study said. "Policy integration of these results can strengthen India's commitments to achieve 2.5-3 billion tCO₂ (total carbon dioxide) equivalent additional carbon sink by 2030. Incorporating wildlife-inclusive accounting within **REDD+** frameworks could generate measurable ecosystem-service credits while ensuring co-benefits for biodiversity," the study said. REDD expands to 'Reducing Emissions from Deforestation and Forest Degradation'.

Which of the following statements is/are correct?

Proper design and effective implementation of UN-REDD+ Programme can significantly contribute to

1. protection of biodiversity
2. resilience of forest ecosystems
3. poverty reduction

Select the correct answer using the code given below.

- (a) 1 and 2 only
(b) 3 only
(c) 2 and 3 only
(d) 1, 2 and 3

1. GS-3: Environment & Biodiversity

Context :A recent study shows that **conserving the Endangered Asiatic Elephant** strengthens forest carbon sinks, biodiversity and India's climate commitments.

2. Asiatic Elephant (*Elephas maximus indicus*)

I. **Status**: Endangered (International Union for Conservation of Nature (IUCN)) | Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Appendix I | Schedule I, Wildlife (Protection) Act, 1972.

II. **Distribution**: India, Nepal, Bhutan, Bangladesh & Myanmar; India supports ~60% of the global wild population.

III. **Key Facts**: Largest Asian land mammal • Herbivore • 20–22 months gestation • Keystone species & ecosystem engineer.

IV. **Ecological Role**: Seed dispersal • Soil enrichment • Forest regeneration • Carbon sequestration.

3. Key Findings

I. **Elephant reserves**: 18,297 km² (1992) → 80,777 km² (2025).

II. **Elephant population**: +6.7% | Forest carbon storage: +38%.

III. **95% of carbon gains** came from better habitat protection, not merely increasing elephant numbers.

IV. **Habitat quality and wildlife corridors** are more important than expanding reserves alone.

4. REDD & REDD+

I. **REDD**: Reducing Emissions from Deforestation and Forest Degradation; proposed at Conference of the Parties (COP)-11, Montreal (2005) under the United Nations Framework Convention on Climate Change (UNFCCC).

II. **REDD+**: Adopted at COP-13, Bali (2007); expands REDD by adding forest conservation, sustainable forest management and enhancement of forest carbon stocks.