

The Hindu Important News Articles & Editorial For UPSC CSE

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The recent visit of Mauritius Prime Minister Navinchandra Ramgoolam to India, and his joint engagement with Prime Minister Narendra Modi in Varanasi, highlighted the civilisational, cultural, economic, and strategic bonds between the two nations. The agreements signed reaffirm India's Neighbourhood First and SAGAR (Security and Growth for All in the Region) policies, while cementing Mauritius's role as an important partner in the Indian Ocean Region (IOR).

Current Affairs Context

Incident (Sept 2025):

- Prime Minister Narendra Modi and Mauritius PM Navinchandra Ramgoolam met in Varanasi.
- Agreements signed in areas of **infrastructure, healthcare, education, technology, oceanography, and capacity-building**.
- India announced a **special economic package** for Mauritius, launched the **first Jan Aushadhi Kendra outside India**, and extended cooperation in building a **500-bed hospital, veterinary school, and AYUSH Centre of Excellence**.
- Collaboration also agreed upon in **hydrography projects** and **Mission Karmayogi training** for Mauritian officials.

Symbolic Message:

- Modi described ties as "not just partnership but family," highlighting civilisational bonds rooted in culture, diaspora, and the Indian Ocean connection.

Static Background

- **Geopolitical Context:** Mauritius is strategically located in the **Indian Ocean Region (IOR)**, crucial for India's **SAGAR (Security and Growth for All in the Region)** doctrine.
- **Diaspora Linkages:** Indo-Mauritians (around 68% of Mauritius' population) trace origins to India.
- **Neighbourhood First & Act East Policy:** Mauritius is part of India's extended neighbourhood.
- **Mauritius & India Relations:**
 - Comprehensive Economic Cooperation and Partnership Agreement (CECPA, 2021).
 - India has supported infrastructure and capacity-building projects in Mauritius for decades.

India and Mauritius not just partners but a family: Modi

Free and secure Indian Ocean is our shared priority, he says, speaking alongside Mauritius PM Navinchandra Ramgoolam; MoUs inked for cooperation in technology, development projects

Mayank Kumar
LUCKNOW

India and Mauritius are not just partners but a family, Prime Minister Narendra Modi said in Varanasi on Thursday, at the signing of agreements to deepen ties between the two countries.

Following bilateral discussions with his counterpart from Mauritius, Navinchandra Ramgoolam, Mr. Modi said that a stable, prosperous, free, open and secure Indian Ocean was a joint priority of both countries.

"Centuries ago, our culture and traditions travelled from India to Mauritius, and became a part of everyday life there. Just like the eternal flow of Maa Ganga in Kashi, the continuous stream of Indian culture has enriched Mauritius. And today, when we are welcoming friends from Mauritius in Kashi, it is not just a formality but a spiritual union. That is why I proudly say that India and Mauritius are not just partners but a family," said Mr. Modi.

The Prime Minister said Mauritius is an integral part of India's "Neighbourhood First" policy.



Deep ties: Prime Minister Narendra Modi and Mauritius PM Navinchandra Ramgoolam in Varanasi on Thursday. PTI

At a press conference, Mr. Modi said, "Today, we have announced a special economic package designed to support Mauritius's needs and priorities. This will strengthen infrastructure, create new employment opportunities, and further enhance healthcare facilities. The first Jan Aushadhi Kendra outside India has now been established in Mauritius."

AYUSH centre
India also announced that it would extend cooperation in establishing an AYUSH Centre of Excellence,

a 500-bed Sir Seewoosagar Ramgoolam National Hospital, as well as a veterinary school and animal hospital in Mauritius. The two countries also signed memorandums of understanding to enhance cooperation in science and technology, oceanographic research, power sector and implementation of Phase 2 of small development projects.

In a proposed hydrography project, the countries will work together on joint surveys, navigation charts, and hydrographic data of the exclusive economic zones of Mauritius.

"Very soon, we will also launch the training modules of Mission Karmayogi [capacity building for government officials] in Mauritius. The Indian Institute of Technology, Madras, and the Indian Institute of Plantation Management have entered into agreements with the University of Mauritius. These agreements will elevate our partnership in research, education, and innovation to new heights," added Mr. Modi, lauding the unique "civilisational ties" between the two countries.

Earlier, Mr. Modi landed at Lal Bahadur Shastri International Airport in Varanasi where he was received by Uttar Pradesh Governor Anandiben Patel and Chief Minister Yogi Adityanath. Mr. Modi's convoy was welcomed at six major locations, including Kachahari and Ambedkar Chauraha.

Mr. Ramgoolam, who arrived in Varanasi on Wednesday, witnessed the Ganga Aarti from a cruise in the evening. On Friday morning, he is scheduled to offer prayers at Shri Kashi Vishwanath Dham before leaving for Ayodhya. (With PTI inputs)

Daily News Analysis

Prelims Pointers

- **SAGAR Doctrine:** India's vision for Indian Ocean – Security and Growth for All in the Region.
- **Neighbourhood First Policy:** Prioritisation of relations with neighbouring and Indian Ocean countries.
- **Jan Aushadhi Kendra:** Affordable generic medicines initiative, launched abroad for the first time.
- **Mission Karmayogi:** National capacity-building program for civil servants in India, now extended to Mauritius.
- **CECPA (2021):** India's first trade agreement with an African nation (Mauritius).

Mains Analysis

1. **Civilisational and Cultural Ties**
 - Shared history of migration, religion, and traditions make Mauritius unique among India's partners.
 - Indian diaspora acts as a bridge for political and cultural goodwill.
2. **Strategic and Geopolitical Significance**
 - Mauritius is located in a key shipping lane of the Indian Ocean.
 - Collaboration in hydrography, oceanographic research, and EEZ navigation strengthens India's maritime strategy against growing Chinese presence.
3. **Economic and Development Cooperation**
 - India's package includes **infrastructure, healthcare, and education projects**—aligned with Mauritius' developmental priorities.
 - Establishment of IIT-Madras and University of Mauritius collaborations enhances innovation and skill development.
4. **Soft Power and Diplomacy**
 - AYUSH centre, Jan Aushadhi Kendra, and Kashi's symbolic welcome underscore India's cultural diplomacy.
 - India projects itself not just as a development partner, but as a **trusted family member** in Mauritius' progress.
5. **Challenges and Opportunities**
 - Need to ensure timely execution of announced projects.
 - Balancing India's role with increasing Chinese investments in Africa and IOR.
 - Opportunities in **blue economy, renewable energy, and digital cooperation** remain underutilised.

Conclusion

The India–Mauritius partnership is a blend of **civilisational ties, strategic convergence, and developmental cooperation**. By combining **cultural diplomacy with concrete economic projects**, India reinforces its role as a natural partner in the Indian Ocean. For India's larger vision of **SAGAR and Viksit Bharat 2047**, Mauritius stands as both a strategic ally and a cultural kin. Strengthening this "family bond" will not only counterbalance external influence but also ensure a **secure and inclusive Indo-Pacific order**.

Daily News Analysis

UPSC Prelims Practice Question

Ques: Mission Karmayogi" programme is related to:

- (a) Water conservation
- (b) Capacity building of civil servants ✓
- (c) Digital education
- (d) Health insurance

Ans: (b)

UPSC Mains Practice Question

Ques: evaluate the strategic importance of Mauritius in the context of India's SAGAR (Security and Growth for All in the Region) policy and the 'Neighbourhood First' policy in the Indian Ocean region. **(250 Words)**



India has been increasingly promoting women's participation in the defence forces, reflecting its commitment to gender equality and military modernization. In this context, the flagging off of the **world's first tri-service all-women circumnavigation sailing expedition, "Samudra Pradakshina,"** marks a historic milestone. It showcases *Nari Shakti*, inter-service cooperation, and India's self-reliance in defence technology, while also projecting the country's global maritime vision.

Current Affairs Context

- **Event (2025):** Defence Minister Rajnath Singh flagged off *Samudra Pradakshina* — the world's first **tri-service all-women circumnavigation sailing expedition** — from Mumbai's Gateway of India.
- **Participants:** 10 women officers from the Army, Navy, and Air Force.
- **Journey:** 9 months aboard the indigenously built *Indian Army Sailing Vessel (IASV) Triveni*, covering 26,000 nautical miles, crossing the Equator twice, and navigating the three great Capes (Leeuwin, Horn, Good Hope).
- **Significance:** Symbol of *Nari Shakti*, jointness of armed forces, and India's self-reliance (Atmanirbhar Bharat).

Prelims Pointers

- **Samudra Pradakshina:** World's first **tri-service all-women circumnavigation expedition**.
- **IASV Triveni:** 50-foot yacht, indigenously built.
- **Route:** Crosses Equator twice + three Capes (Leeuwin, Horn, Good Hope).

Mains Analysis

1. **Gender Empowerment & Nari Shakti**
 - Breaks stereotypes of women in combat/support roles.

First tri-service all-women circumnavigation sailing expedition flagged off

The Hindu Bureau
NEW DELHI

Commemorating women power and the vision of a developed India, Defence Minister Rajnath Singh on Thursday virtually flagged off a historic tri-service all-women circumnavigation sailing expedition – *Samudra Pradakshina* – from the Gateway of India in Mumbai.

The expedition is the first of its kind in the world.

Addressing the gathering from South Block in New Delhi, Mr. Singh described the initiative, a first of its kind, as a glowing symbol of *nari shakti* (women power), the jointness of the armed forces, self-reliant India (Aatmanirbhar



Historic journey: A navy officer shakes hands with members of the 'Samudra Pradakshina', in Mumbai on Thursday. ANI

Bharat) and India's global vision.

The route

According to the Ministry of Defence, over the next nine months, 10 women officers from the Army, Navy and Air Force will sail on-board the indigenously-built Indian Army Sailing

Vessel (IASV) *Triveni*, a 50-foot yacht.

They will follow an easterly route covering nearly 26,000 nautical miles, crossing the Equator twice and rounding the three great Capes – Leeuwin, Horn and Good Hope. They will return to Mumbai in May 2026.

Daily News Analysis

- Enhances representation and visibility of women in defence services.
- 2. **Jointness & National Security**
 - Tri-service nature promotes inter-operability and synergy, a key goal under *Theatre Command reforms*.
 - Expedition builds soft skills — leadership, resilience, teamwork — vital for defence readiness.
- 3. **Self-Reliance & Technology**
 - Use of indigenous vessel showcases maritime capabilities under *Atmanirbhar Bharat*.
 - Promotes India's image as a global maritime power.
- 4. **Symbolism in India's Global Vision**
 - Showcases commitment to gender equality at global forums (UN SDG-5).
 - Maritime diplomacy: reinforces India's strategic location in Indo-Pacific narratives.

Conclusion

The *Samudra Pradakshina* expedition goes beyond being a sporting or adventurous milestone. It symbolizes the fusion of **gender empowerment, military jointness, and indigenous capability**, projecting India's rising stature as a progressive and self-reliant nation. For *Viksit Bharat 2047*, dismantling gender barriers and showcasing leadership in maritime domains will remain crucial to national pride and global recognition.



UPSC Prelims Practice Question

Ques: Consider the following statements with reference to Samudra Pradakshina expedition (2025):

1. It is the first all-women circumnavigation expedition undertaken by the Indian Navy.
2. The expedition is the world's first tri-service all-women sailing circumnavigation.
3. The voyage is being carried out on an indigenously built vessel named Triveni.
4. The route includes crossing the Equator twice and rounding the three great Capes.

Which of the above statements are correct?

- (a) 1 and 2 only
- (b) 2, 3 and 4 only
- (c) 1, 3 and 4 only
- (d) 1, 2, 3 and 4

Ans: (b)

UPSC Mains Practice Question

Ques: The recently flagged off "Samudra Pradakshina" — the world's first tri-service all-women circumnavigation expedition — is seen as a milestone in gender empowerment and military jointness. Discuss its significance for India's defence preparedness, gender equality, and global image. **(150 Words)**



Aedes mosquito-borne viral diseases (ABVD) — dengue, Zika, and chikungunya — remain a significant public health challenge in India. Traditional interventions like outdoor fogging have proven largely ineffective, while scientific evidence points to the effectiveness of **community mobilisation, personal protection, and innovative vector control strategies**. Coordinated action at both local and national levels is crucial to reduce disease burden and protect productivity.

Context (2024–25)

- Millions in India are affected by ABVD each year, leading to hospitalizations and economic losses.
- Local governments and society primarily focus on outdoor fumigation, despite evidence of its ineffectiveness.
- Aedes mosquitoes thrive in human settings, feeding indoors during the day and at night under artificial light, making conventional methods like vaporizers and bed nets inadequate.

Socio-Economic Impact

- Health impact:** Dengue, chikungunya, and Zika cause morbidity, hospitalization, and economic loss.
- Burden on vulnerable populations:** Daily wage workers and urban poor are most affected.
- Environmental links:** Plastic pollution and stagnant water facilitate Aedes breeding, highlighting gaps in urban planning, waste management, and flood control.

Official / Institutional Response

- Ministry of Health & Family Welfare (2017, *India Fights Dengue*) emphasizes larval source control and community participation.
- Delhi's "**10 Weeks, 10 AM, 10 Minutes**" campaign is a successful model, encouraging households to eliminate stagnant water for 10 minutes weekly over high-risk months.
- ASHA workers and resident welfare associations (RWAs) can play a key role in implementing behavioural interventions at the grassroots level.

Static Background

Clearing the fog: need for revised strategies against Aedes mosquitoes

While top-down measures such as the use of Wolbachia mosquitoes are showing promise, they are hampered by high costs; at present protection and community mobilisation, removing larval breeding sites offer the best ways to combat Aedes mosquitoes and the diseases they transmit

Srinivas R. Mummadi

Aedes-borne viral diseases (ABVD) — dengue, Zika, and chikungunya — hurt India's productivity. Local governments and society focus their efforts on outdoor fumigation. This method persists, despite evidence that it is ineffective. It also does not have backing from national agencies as a routine measure.

The Aedes mosquito adapts well to human settings. It feeds indoors during the day, and at night under artificial light. Methods like outdoor fumigation, vaporizers, and bed nets are thus ineffective against it.

Top-down measures, such as the use of Wolbachia mosquitoes, which use a naturally-occurring bacteria, Wolbachia, to help suppress mosquito populations or help breed mosquitoes that cannot transmit diseases, show promise. But high costs and weak institutional support limit their adoption. Dengue vaccine trials are underway, but these offer no protection against Zika or chikungunya.

The best ways to fight Aedes mosquitoes at present therefore, are through personal protection and community mobilisation.

First line of defence

Traditional pyrethroid-based vaporizers commonly used in households are of limited use, as Aedes activity is minimal at night and they are evolving tolerance to these chemicals. An effective strategy focuses on protecting us from mosquitoes rather than killing them.

Loose clothing that covers as much of our body as possible, from September to November is a sensible first step. Next, safe non-insecticides (topical repellents) can be applied on the skin. By releasing volatile compounds, these repellents impair the mosquito's sense of smell, making it essentially invisible to them. The World Health Organization (WHO) recommends using several effective and safe Aedes repellents. DEET is the gold standard for insect repellents. Each year, more than 200 million people use it safely. A 30% concentration provides about six hours of protection.

Para-methane-diol (PMD), derived from the essential oil of the lemon eucalyptus plant (OLE/citronella) is also effective. It is one of the three plant-based repellents endorsed by the United States Centers for Disease Control (CDC) and Prevention. Picaridin, a compound similar to piperine found in black pepper, and 2-undecanone, extracted from the wild tomato plant, are also effective Aedes repellents. DEET, PMD, and 2-undecanone, and R3333 for use in breastfeeding, pregnant women, and



Classmate: The Aedes mosquito has a short range of 100-200 metres. Actions to remove larval breeding sites can have a quick and powerful impact. (LE PHOTO)

children. Agencies do not recommend OLE/PMD/citronella in children under 3 years of age.

In contrast, many well-known natural products, including citronella oil, are unreliable. They tend to lose their effectiveness within 12 hours due to evaporation from the skin. Undiluted concentrations cause severe skin irritation. Experts advise against using them until high-quality studies and safety tests are available.

The Aedes mosquito has a short range of 100-200 metres. Thus, local community actions to remove larval breeding sites can have a quick and powerful impact.

The influential Camino Verde randomised study (RCT) tested community actions. Trained local leaders taught communities about mosquito behaviour and larval breeding sites. Households removed stagnant water from plant pots. They also cleaned and covered indoor and outdoor water containers. Finally, they got rid of discarded plastic bottles and tyres. These efforts reduced dengue infections by 26%. A similar RCT from Chennai showed reduced larval breeding. Using effective lids on water containers cut the odds of larval presence by 94% in another study.

Surprisingly, the Camino Verde study found that the larvicide temephos (a chemical that kills mosquito larvae) increased the risk of dengue. Researchers concluded that the most likely reason was a false sense of security among users, leading them to let their guard down. Many studies from South Asia since then have confirmed that Aedes larvae can develop resistance to temephos.

Plastic pollution is directly linked to the risk of ABVD transmission. Studies show

Aedes-borne viral diseases (ABVD) — dengue, Zika, and chikungunya hurt the productivity of the country

discarded plastics predict dengue epidemics, and regular trash collection/flood management protect against ABVD.

The Ministry of Health & Family Welfare's 2017 monograph India Fights Dengue has additional India-specific recommendations for larval source control. These include removing discarded coconut shells, cleaning air coolers, and not reusing the grains in air coolers for a new season. India's Accredited Social Health Activists (ASHA) network could help turn these guidelines into real change at home and in communities.

A public health campaign from Delhi, supported by Indian government agencies, provides a model for other Indian cities. Called the rule of 10 — "10 Weeks, 10 AM, 10 Minutes," it reinforces larval source reduction as the primary strategy. It encourages every residential welfare association to mobilise each household to set aside 10 minutes at 10 AM every Sunday for 10 weeks from September to November. The goal is to find and eliminate sources of stagnant water during this high-risk season.

Local to national action

Municipal corporations and resident welfare associations should stop depending only on fogging. Instead, they should focus on reducing larval burden, with fogging used as a tactic during outbreaks alone. Local experts can assist

by reinforcing a key "bottom-up" approach. This involves teaching people about effective and affordable personal repellents and reinforcing whole-body clothing during September-November. Urban dwellers need education about stagnant water around indoor plants, flower vases, and sinks.

The global gold standard DEET is difficult to find in Indian markets. This is most likely due to consumer preference based on misinformation. Misleading "natural" and "DEET-free" products in Indian stores overwhelm the consumer. We need education to combat the unfounded fear of DEET. Effective natural/nature-inspired repellents like picaridin, PMD, R3333, and 2-undecanone are also not available in India.

Materials coated with delayed-release transdurethin are now gaining attention. These "spatial emulators," like jute sheets, provide 15 days of continued protection in living spaces. There is no need to turn on a vaporizer every night if one uses them. A landmark study from Peru showed that these emulators cut ABVD risk by an impressive 34%. Wolbachia mosquitoes are already in use in 15 countries with successful results. India needs top-down initiatives to study, approve, and reduce the cost of these innovations.

By using a strategy with top-down and bottom-up features, we can create a 100-200-metre safe zone around all of us. We need to clear the fog of outdated practices and reclaim our homes from this persistent threat.

(Dr Srinivas R Mummadi is a pulmonary and critical care physician based in Hyderabad, India. m.srinivasreddy@gmail.com)

THE GIST

The Aedes mosquito adapts well to human settings. It feeds indoors during the day, and at night under artificial light. Methods like outdoor fumigation, vaporizers, and bed nets are thus ineffective against them.

Municipal corporations and resident welfare associations should stop depending only on fogging. By using a strategy with top-down and bottom-up features, a 100-200 metre safe zone can be created around vulnerable people.

Loose clothing that covers as much of body as possible, safe non-insecticides, community action to remove larval breeding sites are some strategies that can be used.

Daily News Analysis

- **Article 21:** Right to life and personal liberty → includes right to health.
- **Directive Principles (Art. 47):** State duty to improve public health.
- **SDGs:** Goal 3 (Good Health and Well-Being) and Goal 11 (Sustainable Cities and Communities) are directly relevant.

Prelims Pointers

- **Diseases:** Dengue, Zika, Chikungunya — transmitted by *Aedes aegypti*.
- **Repellents:** DEET (gold standard), Picaridin, IR3535, 2-undecanone.
- **Studies:** Camino Verde RCT → 29% dengue reduction through community action; Chennai RCT → 94% reduction in larval presence using container lids.
- **Model:** Delhi "10 Weeks, 10 AM, 10 Minutes" campaign — source reduction.
- **Global innovation:** Wolbachia mosquitoes, transfluthrin-coated spatial emanators.

Mains Analysis

1. **Public Health Challenge:**
 - ABVD causes productivity loss, hospitalization, and economic burden.
 - Urban water stagnation and plastic waste exacerbate disease spread.
2. **Limitations of Current Strategies:**
 - Fogging and vaporizers are largely ineffective.
 - Larvicides like temephos may create a false sense of security and face resistance issues.
 - Dengue vaccines do not cover Zika or chikungunya.
3. **Innovations and Global Best Practices:**
 - **Wolbachia mosquitoes:** successfully used in 15 countries; need regulatory approval and cost reduction in India.
 - **Spatial emanators (transfluthrin-coated materials):** 34% reduction in ABVD in Peru study.
 - **Effective repellents:** DEET, Picaridin, PMD, IR3535 — underutilized in India due to misinformation and low availability.
4. **Governance & Policy Gap:**
 - Requires combination of **bottom-up** (community mobilisation, awareness, personal protection) and **top-down** (technological innovations, regulation) approaches.
 - Behavioural interventions (covering water containers, removing stagnant water) are cost-effective.
 - Institutional coordination (MoHFW, Municipal Corporations, ASHA workers, RWAs) is essential.

Conclusion

Combating *Aedes* mosquitoes requires more than technical or chemical solutions; it demands **behavioural change, community participation, and innovation**. Moving away from outdated practices like routine fogging, India must integrate **bottom-up approaches (community action, personal protection)** with **top-down strategies (Wolbachia, spatial emanators, regulatory support)**. Only through such a holistic strategy can India effectively reduce ABVD burden and make progress toward the vision of **Viksit Bharat 2047**, ensuring both public health security and sustainable urban development.

UPSC Prelims Practice Question

Ques : Which of the following diseases are transmitted by *Aedes aegypti* mosquito?

1. Dengue
2. Zika
3. Chikungunya
4. Malaria

Select the correct answer:

- a) 1, 2 and 3 only
- b) 1 and 4 only
- c) 2 and 3 only
- d) All of the above

Ans : a)

UPSC Mains Practice Question

Ques: Critically examine the effectiveness of traditional vector control methods like fogging and larvicides against *Aedes* mosquitoes in India. Suggest alternative strategies supported by scientific evidence. **(150 Words)**



Vultures, often overlooked in discussions on public health, are critical agents of ecosystem sanitation. By efficiently consuming animal carcasses, they prevent the proliferation of pathogens that can spill over to humans. The steep decline of vulture populations in India, primarily due to diclofenac use, highlights the intersection of biodiversity loss and emerging pandemic risks. Conserving vultures is therefore not just an ecological priority but a strategic public health measure.

key Analysis

Static Dimension

1. Species & Distribution:

- Major vulture species in India: Himalayan griffon, Cinereous vulture, Eurasian griffon.
- Migratory corridor: Central Asian Flyway (CAF) connecting Central Asia to South Asia (over 30 countries).

2. Ecological Role:

- Vultures act as nature's waste managers, rapidly consuming carcasses.
- They prevent the spread of zoonotic pathogens like **anthrax**, **Clostridium botulinum**, **rabies**.
- Their scavenging reduces disease spillover risks to humans and livestock.

3. Threats:

- Veterinary drugs like **diclofenac** caused >95% population decline since 1990s.
- Other threats: poisoning, electrocution from power lines, habitat degradation.

4. Conservation Framework:

- National Action Plan for Vulture Conservation (2016–25)**
- Transboundary commitments under **Convention on Migratory Species (CMS)**.
- Need for integration into **One Health approach** linking human, animal, and environmental health.

Current Dimension (Policy & Public Health Relevance)

1. Link with Pandemics:

- Vultures prevent carcasses from becoming zoonotic spillover hotspots.
- Their rapid carcass consumption reduces pathogen survival time in the environment.
- Communities living near vultures can act as frontline actors in monitoring and safe disposal.

2. Strategic Recommendations:

- Nationwide satellite telemetry** to track habitats and carcass dumps.
- Decision Support System (DSS)** integrating wildlife, livestock, and human health data.

Can vultures help prevent pandemics?

How do vultures reduce the risk of disease spillover? What does their decline mean for public health? Why is protecting vultures cheaper than fighting outbreaks? Can communities be frontline actors in their protection?

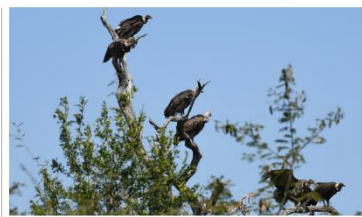
EXPLAINER

Ratul Saha

The story so far: When most of us think of pandemic preparedness, images of vaccines, laboratories, and health workers in protective gear spring to mind. Rarely do we picture a bird, wings outstretched, circling high in the sky. Yet, one of South Asia's guardians of public health is the vulture, nature's most efficient waste manager.

Where are India's vultures? For centuries, vultures have played a vital role in keeping landscapes clean and preventing the spread of pathogens like anthrax, *Clostridium botulinum*, and rabies. Photos of carcass dumping sites with hundreds of vultures jostling for a meal were common in the 1980s. In India, the population once numbered over 40 million, but since the 1990s, it has declined by more than 95% due to diclofenac use. This loss is more than an ecological concern; it represents a slow-burning public health challenge, tying biodiversity decline to the risk of future pandemics.

India's vulture populations are part of the Central Asian Flyway (CAF), a migratory route connecting breeding grounds in Central Asia to wintering areas across South Asia. This corridor spans more than 30 countries and is traversed by millions of migratory birds each year. When vultures and other raptors move along this flyway, they link ecosystems (and disease risks) across borders. Carcass dumps, stopover sites, or poorly managed landfills can quickly turn into spillover hotspots, highlighting why the issue is regional in scope. The CAF is therefore a biodiversity and a public health corridor. Aligning conservation with pandemic prevention along this flyway offers a



Conservation programmes for vultures remain underfunded in the global arena. FILE PHOTO

unique opportunity to address risks at scale while strengthening global health security.

However, the ambition to act regionally is undermined by structural and financial gaps. Conservation programmes for vultures remain underfunded and fragmented in the global arena, with limited integration into national One Health strategies. Infrastructure risks, particularly electrocution from power lines and poisoning from toxic veterinary drugs, persist unchecked.

How are vultures related to pandemics?

As India's National Action Plan for Vulture Conservation (2016-25) nears completion, the next phase offers an opportunity to position vulture conservation as integral to pandemic preparedness. Vultures protect public health by removing carcasses that could otherwise fuel zoonotic spillover.

As the first animals to encounter carcasses, they can play a pivotal role in surveillance and safe carcass management. Yet their contribution has rarely been formalised. Communities

living alongside vultures are also critical but underutilised partners.

Financial mechanisms have not recognised vulture conservation as pandemic prevention, despite the relatively small investments required compared to the immense costs of outbreak response.

How can India protect its vultures?

A post-2025 national strategy could rest on five pillars. First, nationwide satellite telemetry to map habitats, carcass dumps, and spillover hotspots. Second, a Decision Support System (DSS) that integrates wildlife, livestock, and human health data for real-time risk analysis, aligned with International Health Regulations. Third, stronger cross-sector coordination under a One Health framework linking environment, veterinary, and public health agencies. Fourth, transboundary collaboration through the CAF, aligned with commitments under the Convention on Migratory Species and stronger regional disease preparedness; and finally, community stewardship that empowers women, youth, and local groups as

frontline actors in surveillance and awareness.

These five pillars could conserve a keystone species, reinforce public health infrastructure, reduce future pandemic risks, and align directly with the World Health Organization South-East Asia Regional Office Strategic Roadmap for Health Security (2023-27).

Overall, by building on the foundations of the current Vulture Action Plan and embedding health security dimensions, India can transition from species recovery to a broader resilience framework. This would not only conserve a keystone species but also reduce spillover risks and position India as a global leader in biodiversity-linked health security.

What are India's opportunities?

By integrating surveillance across human, animal, and environmental health, reducing the time from detection to response, and fostering regional collaboration, the new approach can create systemic resilience. It could also be cost-effective: the resources required to protect vultures, through telemetry, safe veterinary practices, and infrastructure mitigation, are modest compared to the financial and human toll of an outbreak.

With its large share of CAF-connected vulture populations – including Himalayan griffon, cinereous vultures, and Eurasian griffon – and its demonstrated capacity for innovation, India can showcase how biodiversity conservation doubles as pandemic prevention. By scaling telemetry, operationalising a DSS, and embedding vulture protection into national and regional One Health strategies, India can also present a model that other countries in the region, and beyond, may follow.

The presence of vultures overhead is not only an ecological marker; it's also a reminder that protecting biodiversity can protect public health.

Ratul Saha is Director - Raptor Conservation Programme, WWF-India

THE GIST

▼ Vultures act as public health guardians by swiftly removing carcasses and reducing the risk of zoonotic spillover from pathogens such as anthrax and rabies.

▼ Their populations have crashed by more than 95% since the 1990s, turning biodiversity decline into a slow-burning public health challenge.

▼ Conserving vultures through One Health strategies, Central Asian Flyway collaboration, and community stewardship is a cost-effective way to strengthen pandemic preparedness and health security.

Daily News Analysis

- **Cross-sector One Health coordination** among environment, veterinary, and health departments.
 - **Regional collaboration** along CAF for coordinated disease preparedness.
 - **Community engagement** empowering women, youth, and local groups.
3. **Cost-Benefit Aspect:**
- Protecting vultures is far cheaper than managing outbreaks after spillover occurs.
 - Small investments in conservation prevent larger economic and human health costs in future pandemics.
4. **India's Opportunity:**
- India can emerge as a **global leader in biodiversity-linked health security**.
 - Operationalizing the post-2025 strategy can integrate ecological conservation with pandemic preparedness.

Current Context

- WHO South-East Asia Regional Office **Strategic Roadmap for Health Security (2023–27)** emphasizes integrated surveillance and One Health approaches.
- Global discussions on **pandemic preparedness** now increasingly consider ecological factors, including wildlife conservation.
- Recent vulture conservation initiatives in India demonstrate potential to merge biodiversity and public health agendas.

Conclusion

Vultures are a keystone species whose conservation extends beyond ecological significance to public health security. India's declining vulture populations represent both a biodiversity crisis and a latent pandemic risk. By embedding vulture protection within a One Health framework and promoting regional cooperation, India can mitigate future zoonotic spillovers cost-effectively. The presence of vultures overhead is thus a living indicator that safeguarding biodiversity can simultaneously safeguard human health.

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UPSC Prelims Practice Question

Ques: Which species of vultures are found in India?

- a) Himalayan Griffon, Cinereous Vulture, Eurasian Griffon
- b) King Vulture, American Vulture
- c) African Griffon, Black Vulture
- d) All of the above

Ans : d)

UPSC Mains Practice Question

Ques: What is the impact of the declining vulture population in India on zoonotic diseases and pandemic risks? Suggest national and regional strategies to address this issue. **(150 words)**



Household-level financial data is critical for informed policy-making, especially in a diverse economy like India. To understand both urban-rural household finances and the economic condition of farming communities, the Ministry of Statistics and Programme Implementation (MoSPI) will conduct two major surveys — the **All-India Debt and Investment Survey (AIDIS)** and the **Situation Assessment Survey (SAS) of Agricultural Households** — between **July 2026 and June 2027**. These surveys will provide granular insights into indebtedness, asset ownership, income, and expenditure patterns, thereby guiding fiscal, agricultural, and rural development policies.

Centre to conduct 2 key surveys on household finances from July 2026

While the All-India Debt and Investment Survey will provide critical data on household indebtedness and asset ownership, the Situation Assessment Survey of Agricultural Households will include data on rural household income and expenditure

The Hindu Bureau
NEW DELHI

The Ministry of Statistics and Programme Implementation is all set to conduct two key economic surveys – to measure household finances and to gauge the economic situation of India's farmers – between July 2026 and June 2027, the Ministry announced on Thursday.

These are the All-India Debt and Investment Survey (AIDIS) and the Situation Assessment Survey (SAS) of Agricultural Households.



Income watch: Both the nationally representative surveys are to be conducted from July 2026 to June 2027. FILE PHOTO

“Both of these nationally representative surveys are scheduled to be conducted from July 2026 to June 2027,” MoSPI said in a

press release. “The AIDIS is one of India's most significant surveys on household finance,” it added. “The SAS of Agricultural

Households, first launched in 2003, is designed to assess the economic conditions of farming communities.”

According to MoSPI, the AIDIS provides “critical” data on household indebtedness and asset ownership across both rural and urban areas. “Its findings are instrumental in shaping national accounts, assessing inequality in asset distribution, understanding credit markets, and informing policies of the RBI, MoSPI, and other government institutions,” it said.

The SAS of Agricultural Households, on the other

hand, includes data on agricultural household income and expenditure, indebtedness and access to credit, land and livestock ownership, crop and livestock production, farming practices and the use of technology, and access to government schemes and crop insurance.

“The Ministry of Agriculture and Farmers Welfare, NITI Aayog, researchers, and financial institutions utilise the survey findings to shape policies and programmes aimed at agriculture and rural development,” MoSPI noted.

Static Dimension

1. All-India Debt and Investment Survey (AIDIS):

- Launched to collect household-level data on **debt, credit access, and asset ownership**.
- Covers both **urban and rural areas**.
- Helps understand **inequality in asset distribution**, credit market functioning, and **household financial resilience**.
- Data used by: **RBI, MoSPI, financial institutions**, and for **national accounts**.

2. Situation Assessment Survey (SAS) of Agricultural Households:

- First conducted in **2003**, designed to assess **economic conditions of farming households**.
- Collects data on:

Daily News Analysis

- **Income and expenditure**
 - **Indebtedness and access to credit**
 - **Land and livestock ownership**
 - **Crop and livestock production**
 - **Farming practices and use of technology**
 - **Access to government schemes and crop insurance**
 - Data utilized by **Ministry of Agriculture, NITI Aayog, researchers, and policymakers.**
3. **Significance:**
- Provides **baseline for policymaking**, subsidy allocation, and financial inclusion initiatives.
 - Offers insights into **rural distress, farmer income stability, and agricultural productivity.**

Current Dimension

1. **Timeline: July 2026 – June 2027**, covering all states and union territories for nationally representative data.
2. **Economic & Policy Implications:**
 - **AIDIS:** Helps RBI and MoSPI track household debt trends, identify vulnerable populations, and frame financial sector policies.
 - **SAS:** Supports evidence-based reforms in **agriculture, rural development, and farm credit policies**, including crop insurance and subsidy schemes.
3. **Research and Planning Utility:**
 - NITI Aayog and policymakers can leverage this data for **poverty alleviation, digital finance inclusion, and risk mitigation for farmers.**
 - Enables tracking of **policy impact over time**, like PM-Kisan, crop insurance schemes, and rural credit initiatives.
4. **Significance for UPSC Mains:**
 - Illustrates the government's **data-driven approach** to policymaking.
 - Connects **household financial health and agricultural resilience** to macroeconomic stability.
 - Can be linked with **socio-economic development, financial inclusion, and rural livelihoods** topics in GS Paper 3.

Conclusion

The upcoming AIDIS and SAS surveys represent key instruments for understanding the financial health of Indian households and the economic situation of farmers. By providing detailed, nationally representative data, these surveys will strengthen **evidence-based policymaking**, enhance **financial inclusion**, and inform strategies to reduce **rural distress and indebtedness**. Integrating their insights into national policy frameworks can help India achieve more equitable and resilient economic growth.

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UPSC Prelims Practice Question

Ques: Question: Which ministry conducts the AIDIS and SAS surveys?

- a) Ministry of Agriculture
- b) Ministry of Home Affairs
- c) Ministry of Statistics and Programme Implementation (MoSPI)
- d) Ministry of Finance

Ans: c)

UPSC Mains Practice Question

Ques: Discuss the policy significance of the surveys conducted by MoSPI to measure household debt and the financial situation of agricultural households in India, particularly during times of a pandemic or financial crisis. **(150 Words)**



A project of strategic and national importance

The Great Nicobar Island Project, envisaged by the Narendra Modi government, is an ambitious project with an integrated development plan that comprises an international container transhipment terminal (ICTT) with a capacity of 14.2 million TEU (Twenty-Foot Equivalent Unit), a greenfield international airport, a 450 MVA gas and solar-based power plant, and township of an area of 16,610 hectares.

The project, of strategic, defence and national importance, is designed to transform Great Nicobar into a major hub of maritime and air connectivity in the Indian Ocean Region. The project poses no threat to the island's tribal groups, does not come in the way of any species, and does not jeopardise the eco-sensitivity of the region.

Scrutiny at many levels

Before the project was given the green signal, detailed Environmental Impact Assessment (EIA) studies were carried out and an Environmental Management Plan (EMP) was prepared which, inter alia, include mitigation measures to minimise the impact during the project's construction and operation phases. The commitment to environment and wildlife conservation can be seen in the fact that while no construction has started, an amount of ₹81.55 crore has already been released to various research institutes and departments for initiating wildlife conservation plans.

The risk assessment study has been carried out based on the two sources – anthropogenic and natural disasters and a vulnerability and disaster management plan have been prepared accordingly.

The measuring 166.10 square kilometres (35.35 sq. km revenue land and 130.75 sq. km forest land) has been conceived in three distinct phases, phase I (2025-35) 72.12 sq. km, phase II (2036-41) 45.27 sq. km and phase III (2042-47) 48.71 sq. km.

The project has undergone an appraisal at multiple levels, including statutory scrutiny under the EIA Notification, 2006 (as amended), and clearance has been granted only after compliance with prescribed procedures.

The project will not displace the Nicobarese and the Shompen tribes. The only habitation of the Shompens or the Nicobarese in the project area is at New Chingen, Rajiv Nagar and the administration is not proposing the displacement of any tribal habitations. A committee to oversee welfare and issues related to the Shompen and the Nicobarese has also been mandated in the EC's condition to address the issues of these tribes during the construction and the operation of the project.

Due consultation with tribal experts which includes the Anthropological Survey of India has been done in order to ensure the safety, protection, welfare and well-being of the Particularly Vulnerable Tribal Groups (PVTGs) in the wake of Holistic Development of the Great Nicobar Island Project. The Andaman and Nicobar administration has also made adequate budgetary provisions for tribal welfare plans throughout the project period and beyond in compliance of EC and Coastal Regulation Zone



Bhopender Yadav
is Union Cabinet Minister for Environment, Forest and Climate Change, Government of India

clearances. At present, the Great Nicobar Island has a Tribal Reserve area measuring 751.070 sq. km. Out of the total area proposed for development, measuring 166.10 sq. km, only 84.10 sq. km falls within the Tribal Reserve. Out of the 84.10 sq. km, an area of 11.032 sq. km is already under habitation since 1972 as it is part of revenue area. Thus, the effectively remaining area that measures 73.07 sq. km is being de-notified for the purpose of this project. To compensate the same, an area measuring 76.98 sq. km is being re-notified as tribal reserve. Effectively, there will be a net addition of an area of 3.912 sq. km in the tribal reserve area of the Great Nicobar Island. In Phase I, only 40.01 sq. km of the Tribal Area falls in the Great Nicobar Island project, out of which 11.032 sq. km is already under revenue since 1972. The provision in respect of the National Commission for Scheduled Tribes is provided for under Article 338A(9), which states: "The Union and every State Government shall consult the Commission on all major policy matters affecting Scheduled Tribes." It would be relevant to mention here that the Union Territory of the Andaman and Nicobar Islands has not undertaken any new policy measure affecting the Scheduled Tribes – except that a development project is being implemented in Great Nicobar.

The relevant issues

The development plan is in sync with the Shompen Policy. The policy allows large-scale development proposals in Great Nicobar Island subject to consultation with the Ministry, Directorate of Tribal Welfare and the Andaman Adim Janjati VikasSamiti. Necessary consultation with the Union Ministry of Tribal Affairs was also carried out and it is based on the recommendation of the Empowered Committee.

Two important policy documents – the Jarawa Policy of 2004 and Shompen Policy of 2015 – clearly specify the process of consultation. The Jarawa Policy of 2004 declares the AAJS as the trustee of the PVTGs. The Shompen Policy of 2015 specifies, vide paragraph 6.3, that "With regard to large-scale development proposals in the future for Great Nicobar Island (such as trans-shipment/container terminal, etc), the welfare and integrity of the Shompen community should be given priority and be reviewed in consultation with the Department of Tribal Welfare and Andaman Adim Janjati VikasSamiti (AAJVS) and the Ministry of Tribal Affairs". This is being followed in letter and spirit.

In its observations, the Empowered Committee has clearly stated that the interests of tribal population will not be affected adversely and that the displacement of tribals would not be allowed.

The decision to develop Great Nicobar Island has been taken after a comprehensive consideration of its ecological, social, and strategic aspects. The project is of national and strategic importance, is expected to accelerate holistic development, will generate employment, and will position the Islands not only from strategic and defence point of view but also from economic point of view.

This is about only 2% of the total area of the Andaman and Nicobar Islands. Further, 130.75 sq. km of forest area is proposed to be diverted for

the project which is only approximately 1.82% of the total forest area of the Andaman and Nicobar Islands. As in the guidelines of the Forest (Conservation) Act, 1980, the States/Union Territories with forest land of more than 75% of their respective total geographical area, shall not be insisted upon for providing non-forest land for raising compensatory afforestation and the same may be taken up in any other State/Union Territory having deficient forest land/cover and having land bank for compensatory afforestation.

The Andaman and Nicobar Islands have a recorded forest cover of more than 75% of their geographical area, and the compensatory afforestation is proposed to be raised in other States in conformity with the aforesaid guideline formulated by the Ministry for Environment, Forest and Climate Change and in view of the fact that sufficient non-forest land for the purpose is not available in this Union Territory. Land measuring 97.30 sq. km has been identified in Haryana for diversion of phase I of forest land measuring 48.65 sq. km.

The total estimated number of trees in 130.75 sq. km of forest land to be diverted is 18.65 lakh. However, the maximum estimated number of trees to be felled in forest area measuring 49.86 sq. km is 7.11 lakh. As per the Environmental and Forest Clearance condition, an area measuring 65.99 sq. km shall be retained as green area wherein no tree felling is envisaged.

Studies by institutions of standing

All the institutions engaged in conducting various environmental studies for the project – including the Zoological Survey of India, the Botanical Survey of India, the Salim Ali Centre for Ornithology and Natural History (SACON), and the Wildlife Institute of India – are reputed government organisations with a long-standing presence and institutional capacity in the Andaman and Nicobar Islands. These institutes possess extensive historical datasets and a deep understanding of the local ecological context, having conducted research and data collection in the region over several decades.

For facilitating movement of wildlife between forest and the sea shore and for the crossing of arboreal animals as well as for passage of snakes, crabs and crocodiles, safe wildlife corridors at eight locations along the eastern side of the island (connecting forest and seashore through viaducts in the north south arterial road) have been proposed and incorporated in the master plan.

The Narendra Modi government remains committed to the welfare of tribal groups, environmental safeguards, and sustainable development. Comprehensive safeguards have been prescribed to ensure the long-term protection of the Shompen and the Nicobarese communities.

The Great Nicobar Project is a significant example of economy and ecology complementing each other. It combines the objectives of economic growth, infrastructure development and employment generation with critical national security imperatives, thereby contributing to India's long-term strategic and developmental interests in the Indian Ocean Region while also protecting the environment.

The decision to develop Great Nicobar Island has been taken after due consideration of its ecological, social and strategic aspects

GS. Paper 02 –Governance

UPSC Mains Practice Question: How does the Great Nicobar Island Project strengthen India's strategic presence in the Indian Ocean Region (IOR)? Discuss the project's role in defence and maritime security. (150 Words)

Context :

The Great Nicobar Island Project, launched by the Narendra Modi government, is a multi-sectoral initiative aimed at transforming Great Nicobar into a major hub of maritime and air connectivity in the Indian Ocean Region (IOR). It combines strategic, economic, and environmental objectives while ensuring the protection of tribal communities.

Current Affairs Context

- Project area: **16,610 hectares** (166.10 sq. km) in Great Nicobar.
- Components:
 - International Container Transshipment Terminal (ICTT) — 14.2 million TEU capacity
 - Greenfield international airport
 - 450 MVA gas and solar-based power plant
 - Township development
- Timeline: **Three phases** (Phase I: 2025–2035, Phase II: 2036–2041, Phase III: 2042–2047).
- Environmental safeguards: ₹81.55 crore released for wildlife conservation, environmental management plans prepared, and risk assessment for natural and anthropogenic hazards conducted.

Key Features

1. **Tribal Welfare and Rights**
 - No displacement of Nicobarese or Shompen tribes; habitation areas remain untouched.
 - Tribal welfare committee mandated to monitor issues during construction and operation.
 - Compliance with **Shompen Policy (2015)** and **Jarawa Policy (2004)**.
 - Net increase of **3.912 sq. km in tribal reserve areas**.
2. **Environmental Safeguards**
 - Forest land diverted: 130.75 sq. km (~1.82% of total forest area).
 - Compensatory afforestation: 97.30 sq. km in Haryana.
 - Safe wildlife corridors across eight locations for arboreal and terrestrial animals.
 - Studies by reputed institutes: Zoological Survey of India, SACON, Botanical Survey of India, Wildlife Institute of India.
3. **Strategic and Economic Significance**
 - Enhances India's presence in the **Indian Ocean Region**.
 - Integrates **economic growth, infrastructure development, and employment generation**.
 - Aligns with national security and defence imperatives.

Analysis for UPSC

Prelims Significance of Great Nicobar Island Project

1. **Strategic Importance**
 - Enhances India's presence in the **Indian Ocean Region (IOR)**.
 - Supports **defence and maritime security** with improved ports and air connectivity.
2. **Economic and Infrastructure Development**
 - International Container Transshipment Terminal (ICTT) — **14.2 million TEU capacity**.

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- Greenfield international airport and township development.
- Generates **employment opportunities** and boosts regional economy.
- 3. **Environmental Considerations**
 - Forest land diversion: **130.75 sq. km (~1.82% of total forest area)**.
 - **Compensatory afforestation** planned in Haryana.
 - Safe wildlife corridors for arboreal and terrestrial species.
 - Compliance with **EIA Notification 2006** and CRZ guidelines.
- 4. **Tribal Welfare**
 - No displacement of **Nicobarese or Shompen tribes**.
 - Consultation with Ministry of Tribal Affairs and **Andaman Adim Janjati Vikas Samiti**.
 - Net increase of **3.912 sq. km in tribal reserve areas**.
- 5. **Policy & Legal Relevance**
 - Alignment with **Shompen Policy 2015, Jarawa Policy 2004**, Forest (Conservation) Act 1980.
 - Example of **eco-sensitive infrastructure planning** in Union Territories.
- 6. **National and Long-term Relevance**
 - Integrates **economic growth, ecological protection, and strategic security**.
 - Positions Great Nicobar as a **hub of maritime and air connectivity** in IOR.

Mains Significance of the Great Nicobar Island Project

- **Strategic and Defence Significance**
 - Strengthens India's presence in the **Indian Ocean Region (IOR)**, a key geopolitical theatre.
 - Facilitates **maritime surveillance and logistics**, enhancing national security against regional threats.
 - Supports **dual-use infrastructure** (civilian ports and airports with defence applicability).
- **Economic and Infrastructure Development**
 - Promotes **industrial growth**, trade, and tourism through an **international container transshipment terminal** and airport.
 - Generates **direct and indirect employment**, fostering socio-economic development of the Andaman & Nicobar Islands.
 - Positions Great Nicobar as a **hub of connectivity**, complementing India's "Act East" and maritime trade ambitions.
- **Environmental and Sustainable Development**
 - Incorporates **Environmental Impact Assessment (EIA) and Environmental Management Plans (EMP)**.
 - Ensures **minimal forest loss** (1.82% of total forest area) with compensatory afforestation in Haryana.
 - Includes **wildlife corridors**, preserving ecological continuity and biodiversity.
- **Tribal Welfare and Social Inclusion**
 - No displacement of **Nicobarese or Shompen tribes**; their rights safeguarded under **Shompen Policy (2015)**.
 - Establishment of **tribal welfare committees** for monitoring and addressing grievances.
 - Serves as a model for **inclusive infrastructure planning** in ecologically and socially sensitive regions.
- **Policy and Governance Implications**
 - Demonstrates **multi-level statutory compliance** (EIA Notification, CRZ rules, Forest Conservation Act).
 - Exemplifies **holistic planning** integrating **strategic, economic, ecological, and social dimensions**.
 - Offers lessons for **future island and coastal infrastructure projects** in India.

Way Forward

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1. **Balanced Development**
 - Continue to integrate **economic growth, strategic infrastructure, and environmental safeguards**.
 - Ensure development in **phases** to allow monitoring and adaptive management.
2. **Strengthen Tribal Welfare**
 - Maintain **continuous engagement** with Nicobarese and Shompen communities.
 - Implement **livelihood programs**, health, education, and cultural preservation initiatives.
 - Ensure the **empowered tribal welfare committee** functions effectively throughout the project.
3. **Environmental Sustainability**
 - Strict enforcement of **EIA and EMP provisions** during construction and operations.
 - Monitor **wildlife corridors** and ecological parameters using modern technologies.
 - Promote **renewable energy** and low-carbon infrastructure.
4. **Strategic & Security Preparedness**
 - Integrate the project with **Indian Ocean maritime and defence strategy**.
 - Ensure **critical infrastructure security** during development and operation.
5. **Community and Stakeholder Participation**
 - Encourage **local employment, skill development**, and public-private partnerships.
 - Maintain **transparency and data-driven monitoring** to build trust among stakeholders.
6. **Policy & Governance Mechanisms**
 - Regular reviews by **Ministry of Environment, Forest & Climate Change** and **Ministry of Tribal Affairs**.
 - Implement **adaptive management** based on environmental and social impact assessments.
 - Use the project as a **model for sustainable, inclusive, and strategic island development**.

Conclusion

The Great Nicobar Island Project is a **model of integrated development**, combining **economic, strategic, and ecological objectives**. It demonstrates that large-scale infrastructure in ecologically and socially sensitive regions is feasible when **robust environmental safeguards, tribal consultations, and multi-institutional planning** are implemented. The project not only enhances India's strategic footprint in the IOR but also exemplifies sustainable development practices in sensitive island ecosystems.