



# Topics - MINDS MAPS included (Daily current affairs 4th APRIL 2025



- SC ROLE IN PROTECTION OF FOREST/BIODIVERSITY
- *Kannadippaya,*
- COMPASSIONATE CARE
- The Future of Connectivity in India: SpaceX, Starlink, and the Digital Age.
- India's Undersea Cable Revolution
- Livestock Theft and Terrorist Financing in the Sahel.



By saurabh Pandey





# Supreme Court halts tree felling in Kancha Gachibowli

**Krishnadas Rajagopal**  
NEW DELHI

The Supreme court on Thursday observed the extent of destruction caused in 100 acres of Kancha Gachibowli “forest” area shows an alarming picture while directing the Telangana Chief Secretary to explain the “compelling urgency” which drove the State government to flatten trees with heavy machinery and excavate the land in the name of “developmental activity”.

Staying work on the land, a Bench of Justices B.R. Gavai and A.G. Masih said the State Chief Secre-

tary would be held responsible if any further activity, other than protecting the remaining trees, was undertaken. “The Chief Secretary will be sent to a temporary prison constructed on the same spot,” Justice Gavai remarked in court.

Thursday morning saw the Supreme Court register a *suo motu* case, ‘In Re Kancha Gachibowli Forest State of Telangana’, after *amicus curiae*, senior advocate K. Parameshwar mentioned the issue. The court asked the Telangana High Court Registrar to visit the spot of destruction and submit an interim re-



**Power of youth:** Students of the University of Hyderabad raise slogans during their protest on Tuesday. PTI

port with photographs of the area by 3.30 p.m.

Senior advocate A.M. Singhvi, who appeared for the State, denied that the land had been a forest.

When asked whether trees had been felled, Mr.

Singhvi had replied that “some shrubs were cleared” in the area. Post lunch, when the hearing re-commenced, the Bench perused the Registrar’s report and noted that “a huge number of trees were

felled apart from heavy machinery deployed across an area of 100 acres”. It noted that a number of peacock, deer and birds were seen in the area, *prima facie*, indicating “that there existed a forest inhabited by the wild animals”. When advocate Gaurav Agarwal, for Telangana, objected to the use of the term “huge”, Justice Gavai retorted, “we are saying so... 100 acres is something like Corbett... 100 acres in two or three days is something... we would only remind one sentence, howsoever high one may be, one is not above the law”.







# SC ROLE IN PROTECTION OF FOREST/BIODIVERSITY



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# Kannadippaya gets GI tag, anchoring tribal handicraft on the global map

**Sandeep Vellaram**

IDUKKI

*Kannadippaya*, a unique tribal handicraft from Kerala, has received the Geographical Indication (GI) tag ensuring market protection and a global platform for this traditional product.

GI tag has been awarded to the Unarvu Pattikavargha Vividodesha Sahakara Sangam, Venmani, and the Vanasree Bamboo Craft & Vanavibhava Shekara unit, Uppukunnu, both in Idukki district. The recognition makes *kannadippaya* the first tribal handicraft product from Kerala to receive the GI tag.

The product derives its name (literally meaning



**Honouring tradition:** *Kannadippaya* is the first tribal handicraft product from Kerala to receive a GI tag. JOMON PAMPAVALLEY

mirror mat) from its reflective pattern.

## Unique properties

Made from the soft inner layers of reed bamboo, the mat stands out for its unique properties – providing warmth during winter and cooling effect in sum-

mer. The craft is preserved by the Oorali, Mannan, Muthuva, Malayan, and Kadar tribal communities and by the Ulladan, Malayarayan, and Hill Pulaya artisans in Idukki, Thirissur, Ernakulam, and Palakkad districts.

Former director Shyam

Visvanathan of the Kerala Forest Research Institute and senior scientist A.V. Raghu played a key role in securing the GI tag for *kannadippaya*. Sunil P.V., member of Vanasree Bamboo Craft, expressed concern about the lack of a structured market for the product. C.R. Elsy, former head of the Intellectual Property Rights cell at the Kerala Agricultural University, who spearheaded the initiative emphasised the importance of reviving interest in the craft among younger generations. “Since eco-friendly products are in demand globally, this recognition will open international markets for *kannadippaya*,” she said.



# ***Kannadippaya,***

- ***Kannadippaya***, a unique tribal handicraft from Kerala, has received the Geographical Indication (GI) tag ensuring market protection and a global platform for this traditional product.
- Made from the soft inner layers of reed bamboo, the mat stands out for its unique properties — providing warmth during winter and cooling effect in summer





# Passion in primary healthcare: here's what it looks like in India

Cases from tribal, rural and urban India show how compassion helps deliver better care, drive responsiveness, and meet the public health needs of the community; understanding the compulsions of the patient will make every visit more productive and help people to overcome their fears of the system and social pressures

Mahima Jain

In January, the World Health Organization (WHO) published a report calling for compassion in primary healthcare systems.

"Compassion – characterised by awareness, empathy, and action – is identified as a transformative force for PHC, driving quality care and health system transformation," the report read. "Compassionate primary healthcare means being responsive, adapting to the community's needs, and also includes a focus on quality, through training, audits, hand-holding, and on-the-job support," says Sanjana Brahmamwar Mohan, physician and co-founder of Udaipur-based non-profit Basic Health Services (BHS).

India has an extensive primary healthcare system. There are sub-centres in remote areas serving 3,000-5,000 people, primary health centres (PHCs) serving 20,000-30,000 people, and community health centres (CHCs) for 80,000-120,000 people. In all there are 16 lakh sub-centres, 26,636 PHCs, and 6,155 CHCs, according to the National Health Mission.

Let us take a close look at three instances of compassion in health systems – one each in a rural, an urban, and a tribal area. In these examples, there are lessons for the rest of the country. They provide a sense of grounding, showing the importance of prioritising certain aspects at all times, but especially in a crisis, and call for the display of courage to carry forward.

**Clinical courage in Rajasthan**  
Vidhi Panchal, a physician, sees hundreds of patients at Rava, a remote village in the tribal belt of Udaipur district. The PHC, called an Anrit clinic, is run by BHS. There are six such clinics serving close to 90,000 people in southern Rajasthan. Primary healthcare should connect with communities and understand their problems and their priorities, he says. "But [most] primary healthcare [services] in India lack that conversation with communities. That's the basic flaw."

Dr. Mohan wrote in a 2022 article in *BMJ GH Blogs*, "In India, a physician working at a PHC is entrusted with managing over 40 national health programmes, the operations of the PHC and 5 to 6 sub-centres, attending and conducting training initiatives, meetings, documentation, and reporting, in addition to seeing patients at the PHC." Compassionate care is often difficult to provide in such setting.

Dr. Panchal gave the example of Tukaram (name changed), a 22-year-old who had had tuberculosis for nearly a decade. When Tukaram came to Dr. Panchal, he could barely walk, and he weighed only 23 kg. Dr. Panchal had seen hundreds of such patients across Rajasthan's PHCs, often in the mining districts. In 2023, India had a record 28 lakh TB cases, with 3 lakh deaths. Tukaram had also worked in mines for nearly a decade. His treatment across three States had resulted in no improvement. He had relapsed twice.

Physicians at PHCs usually refer such patients to a CHC or a district hospital, but this is usually 50-70 km away, Dr. Mohan said. The reasons for referral may be poor infrastructure, lack of lifesaving drugs, patient safety, medico-legal consequences, risk of community transmission or even evidence-based medicine. But the compassionate care in this



Despite long-standing issues of underfunding and understaffing that have affected service delivery for decades, the existing infrastructure can meet varied needs by empowering its people to be responsive. Photograph used for representational purposes only. GETTY IMAGES

case might warrant managing the patient at the PHC. Dr. Panchal knew that referring Tukaram to a CHC or higher centre would only drain his health and pocket, so he made sure Tukaram's family was not exposed to TB and gave the young man access to pain relief medicines through his final months.

Dr. Mohan called Dr. Panchal's decision to put the patient's needs at the centre, "clinical courage." In the *BMJ GH Blogs* article, she wrote that administrative and clinical workload, support from reporting officers, support for clinical guidance, and capacity for support staff can build such courage and foster compassionate care. In Rajasthan, this can mean having community health workers accompany patients to referrals, especially when there are no family members; raising awareness of national programmes for TB and silicosis; ensuring diagnostics and drugs are accessible; making home visits and negotiating with families and patients; and so on.

The Anrit clinics have thus seen a rise in footfall: from around 400 patients in 2021 to 51,000 in 2024. The vast majority are members of Scheduled Tribes.

Dr. Mohan says that while compassion is central to the way BHS works, "it is perhaps the most important value that drives us and that is reinforced every day," she said. BHS ensures staff at all levels are treated with dignity and respect, their talent is nurtured, and they are valued. This has had positive effects on patient interactions at all levels. "In the government, one sees compassion is missing; it is visible in the struggles and pressures of the auxiliary nurse midwives, the ASHAs [Accredited Social Health Activists]. If there were more compassion for them, things would be so different," she adds.

**Helping survivors of violence**  
Praveena Ben (43) is an ASHA worker in heron in Patan district, Gujarat. While she has served a community of over 800 people for nearly a decade, identifying and supporting survivors of violence were not part of her duties. Three years after she became an ASHA, Society for Women's Action and Training Initiatives (SWATI), an NGO working on violence prevention, offered her this training. She was taught to identify signs of abuse, have discreet conversations during fieldwork and home visits and encourage them to seek help through the primary health



Despite long-standing issues of underfunding and understaffing that have affected service delivery for decades, the existing infrastructure can meet varied needs by empowering its people to be responsive. Photograph used for representational purposes only. GETTY IMAGES

A physician working at a PHC is managing 40 national health programmes, operations of the PHC and 5 to 6 sub-centres, conducting training, and meetings, in addition to seeing patients at the PHC.

system. This training was useful during the COVID-19 pandemic, she says. Praveena could identify women facing domestic violence at home and convince them to seek help at the nearest sub-centre, where SWATI would send a counsellor. SWATI designed this "upward referral" chain to address the highly decentralised, multi-tiered rural health system in India.

By using existing infrastructure, the system aims to address violence against women as a public health issue, ensuring a compassionate response at every level of care. Since 2012, SWATI has worked with more than 400 ASHA workers and counsellors. A counsellor visits a sub-centre every few weeks or on demand. ASHAs are empowered to refer while keeping in mind a patient's needs, their relationships within communities, and the relevant national health policies. Sub-centres, also called 'Health and Wellness Centres' under the Ayushman Bharat Scheme, are relatively closer to the survivors' homes and thus more accessible.

"At the sub-centre we only do the counselling," SWATI founder-director Poonam Kathuria said. For mediation and further intervention, women are referred to district hospitals, bypassing the PHCs. Ms. Kathuria said this ensures survivors are not revealed in the community, since PHCs are accessed and staffed by community members. ASHAs are able to address sensitive issues in a culturally appropriate manner, and create a safe space. This is crucial to reduce the fear and stigma associated with reporting violence. A multifaceted strategy must encompass systemic changes, resource allocation, and capacity building to effectively scale up the responsiveness and compassion demonstrated by ASHAs in addressing women's health and needs. Primary healthcare systems should be identified as a pivotal first step for women, and gender-sensitive and trauma-informed care should be included in primary health protocols.

## Tamil Nadu's health systems

Monika Das Gupta has studied how public health systems in India and Sri Lanka are structured, and respond to disasters and epidemics. A 2019 paper she co-authored noted that the Centre has tasked many basic services, including aspects of sanitation and public health, to be devolved from line agencies to elected local bodies without strong mechanisms to ensure these bodies are held accountable for their services.

In an interview, Dr. Das Gupta uses the example of disaster management in India, which typically involves the army and administrative services rather than the health system. In Odisha and West Bengal, both prone to cyclones, these agencies are deployed to respond to disasters and to evacuate people. The army is well-served in public health and sanitation measures. But the effectiveness of the response can vary depending on which authorities are involved. She recalled visiting some districts in eastern India after a cyclone where the local PHC focused on supplying chlorine but lacked broader engagement in disaster response. When asked about the overall death toll, they deferred to the police. Dr. Das Gupta adds that while the PHC staff was dedicated, they were not given training in public health measures to prevent disease outbreaks after a disaster, as are their counterparts in Tamil Nadu.

On the other hand, she lauded Tamil Nadu's disaster preparedness, emphasising that its public health staff undergoes annual epidemic training. This ensures that every level of the health system – from entomologists in Chennai to district health officers – knows exactly how to respond to a disaster. During the 2004 tsunami, Tamil Nadu's health workers coordinated with other departments to ensure proper disposal of dead animals, fish, and fish rot; followed by ensuring sanitary conditions in temporary housing for displaced populations and food safety checks on donated food supplies. Their preparedness is a result of continuous training and inter-departmental coordination, unlike their counterparts in many other States.

Chennai takes a considered approach to devolution that distributes responsibility between line agencies, technical personnel, and elected representatives governed by the Chennai Municipal Corporation Act. Dr. Das Gupta explains that Tamil Nadu's system includes annual district-level meetings, where the roles of departments are clearly defined, leading to effective cooperation. Whereas in other States, struggle with fragmented management, lack of supervision, and ineffective delegation, Tamil Nadu succeeds through structured governance, accountability mechanisms, and proactive disaster response.

**People-centred healthcare**  
Two key takeaways of the WHO report were that compassionate human relationships, built on trust and mutual respect, are the bedrock of high-quality care delivery in primary healthcare systems and that when the levers of this system are in the right compass, they can effectively respond to the unique needs of different populations.

(Mahima Jain is an independent journalist covering the socio-economics of gender, environment and health. mahimajain@gmail.com)

## THE GIST

Compassionate care can mean having community health workers accompanying patients to referrals, raising awareness of programmes for TB and silicosis, ensuring access to diagnostics and drugs, making home visits and negotiating with families and patients.

BHS ensures staff are treated with dignity, and talent is nurtured. This has impacted patient care positively at all levels. In the government, one sees compassion is missing; it is visible in the struggles and pressures of auxiliary nurse midwives, ASHAs. If there was more compassion for them, things would be so different.

Women who might be facing abuse are referred to district hospitals, bypassing PHCs. This ensures survivors aren't revealed in the community, since PHCs are accessed and staffed by the community. ASHAs offer support and address sensitive issues in a culturally appropriate manner.





# COMPASSIONATE CARE

- **“Compassion — characterised by awareness, empathy, and action — is identified as a transformative force for PHC(primary Health care), driving quality care and health system transformation,” the report read. “Compassionate primary healthcare means being responsive, adapting to the community’s needs, and also includes a focus on quality, through training, audits, hand-holding, and on-the-job support,”**
- **Compassionate care can mean having community health workers accompanying patients to referrals; raising awareness of programmes for TB and silicosis; ensuring access to diagnostics and drugs; making home visits and negotiating with families and patients**

# The other space race — the geopolitics of satellite net



India still has regions where fiber optic cables have never reached and cellular towers remain sparse. SpaceX's recent partnerships with Airtel and Jio to expand Starlink services across India could be looked at as a fundamental shift in the conceptions of connectivity, national sovereignty, and economic power in the digital age.

It is not a zero-sum game for both sides. There are economic benefits for all. For Airtel and Jio, Starlink allows them to provide high-speed Internet to India's most remote regions without the infrastructure costs of terrestrial networks. For SpaceX, the deal opens up a huge market. It also takes care of India's complex regulatory landscape by channelling Starlink's technology through domestic players.

Yet, these arrangements are not just business strategy. There is a lot of geopolitics involved too. Communications infrastructure has always been intertwined with national security and sovereignty, a reality made even more pronounced when that infrastructure orbits 550 kilometres above earth. With the intertwining of business and political interests globally, it cannot be denied that there are fears that the United States-based Starlink network gives the U.S. an advantage in the competition for digital influence, particularly as China develops its rival GuoWang constellation. India's options were to wait for homegrown alternatives or partnering with other countries (potentially even China). But choosing Starlink could indicate a geopolitical realignment in the Indo-Pacific region. India chose a (seemingly) democratic alliance rather than an authoritarian one.

The monopolistic concerns surrounding Starlink cannot be dismissed. With around 7,000 satellites already in orbit, SpaceX enjoys first-mover advantages in the low earth orbit internet market. OneWeb, its closest competitor, operates fewer than 650 satellites, while Amazon's Project Kuiper remains very small. This is tending towards a monopolistic market structure. This also has its attendant economic problems of competition, pricing, and dependency. It runs the risk too of having private companies wield nation-state levels of influence over critical infrastructure, as was evident when SpaceX briefly cut Ukraine's Starlink access during critical military operations in 2022.

## Economic value versus geopolitical control

Let us analyse these aspects of satellite Internet through a framework that captures both



**Arindam Goswami**

is a Research Analyst in the High-Tech Geopolitics Programme at The Takshashila Institution

It remains to be seen whether satellite Internet will lead to a promise of universal connectivity or strengthen existing digital divides in orbital form

economic value and geopolitical control. The high economic value, high geopolitical control scenario can be called the "Digital Sovereignty" scenario, where nations have both profitable telecommunications and strategic independence. China's GuoWang constellation aims for this position, designing its system explicitly as a state-controlled asset. In the high economic value but low geopolitical control equation is the category of "Market Dominance", where Starlink currently operates, offering tremendous commercial potential but placing control largely outside the host nation's hands. This can be mitigated to some extent by routing it via domestic telecommunications companies, though this could be termed as just a face-saver, as effective control still sits with Starlink. The "Strategic Asset" scenario (low economic value, high geopolitical control) is where India's limited indigenous satellite capacity could be placed into (this strategically vital but economically suboptimal). Economically sub-optimal, it could be argued, is strategically useless, because it does not offer any leverage power.

Finally, the "Marginal Presence" context captures emerging players such as Amazon's Kuiper project – an example of still developing economic models while offering limited strategic leverage.

## Towards digital sovereignty for India

For India, the question now becomes whether this is a long-term strategic position. India's Space Research Organisation (ISRO) continues to develop indigenous satellite capabilities. The aim is obviously "Digital Sovereignty". However, it would require a lot of investment and time, both of which have their strategic tradeoffs.

The partnership model adopted by Airtel and Jio creates a buffer that preserves some measure of sovereignty. Technology transfer provisions and local data storage requirements could protect India's concerns and also enhance India's long-term capabilities. Additionally, having more options for domestic partners means India can maintain some amount of leverage against local monopolistic behaviour, though one could argue about its effectiveness. This model of managed dependency is worth exploring further.

One aspect that is intriguing in all of this is the absence of the Bharat Sanchar Nigam Limited (BSNL) from these partnerships. BSNL could have helped reduce some of India's strategic concerns. As a state-owned enterprise with extensive rural presence, BSNL provides dual benefits: it

provides Starlink with broader reach while giving the government more direct oversight of this critical technology. While BSNL is facing some financial problems, considering the strategic benefits of having BSNL involved also represents a lost chance.

## A technology evolution, challenges

Could these partnerships establish a template for something such as global Internet governance that has geopolitical dimensions? As developing nations face the choice between American, Chinese, or indigenous satellite systems, the Starlink-India hybrid model tries to balance technological pragmatism with strategic autonomy.

For SpaceX and Elon Musk, these partnerships have benefits both in terms of commercial opportunity and political legitimacy. Indian regulatory concerns are assuaged. This natural evolution of technology from being disruptive to partnering with governments mirrors the trajectory of previous technological revolutions, from railroads to telecommunications.

The ultimate question remains whether satellite Internet will fulfil its promise of universal connectivity or simply reproduce existing digital divides in orbital form. If it remains too expensive for most of India's rural population, or requires significant government subsidies which would make it untenable for the Indian government, then it would be a bad deal. Some innovative sales techniques, such as tiered pricing models and package deals, would be needed in this scenario. The famed "innovation at the bottom of the pyramid" could surely help India, by packaging products in a way that are accessible, affordable, and valuable to low-income populations, while also being profitable to the companies involved.

With increasing attractiveness of satellite Internet, the governance challenges will only intensify. These will include orbital debris management, and space traffic control. Their transnational nature will require international governance cooperation even amid strategic competition. Without effective global governance, the promise of universal connectivity could be undermined by the tragedy of the orbital commons.

Orbital assets are going to become as strategic as terrestrial ones. For all stakeholders – nations, companies, and citizens – the challenge is to harness the connectivity revolution without surrendering autonomy.











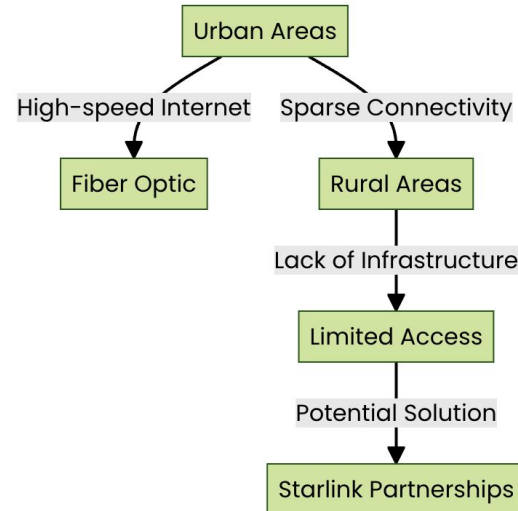
# The Future of Connectivity in India: SpaceX, Starlink, and the Digital Age

## Introduction

India is a nation of contrasts, with advanced urban areas and remote villages lacking basic connectivity.

SpaceX's partnerships with Airtel and Jio aim to expand Starlink services, potentially transforming connectivity, sovereignty, and economic power

Connectivity Landscape in India:



# The Connectivity Gap in India

## Regions Lacking Fiber Optic and Cellular Infrastructure

- Urban areas enjoy high-speed internet, while rural regions remain disconnected.
- Lack of infrastructure limits access to information, education, and economic opportunities.

## SpaceX's Partnerships with Airtel and Jio

### Economic Benefits for All Parties

- Collaboration allows high-speed internet provision without hefty infrastructure costs.
- Opens a massive market for SpaceX, aligning with India's regulatory landscape.

### Navigating India's Regulatory Landscape

- Channeling technology through domestic companies helps sidestep regulatory hurdles.
- Aligns economic benefits with geopolitical considerations.



# Geopolitical Implications of Starlink

## National Security and Sovereignty

- Communications infrastructure is linked to national security.
- Concerns about control over critical infrastructure in times of conflict.

## The U.S. vs. China in Digital Influence

- India faces a choice between homegrown alternatives and foreign partnerships.
- Aligning with democratic allies over authoritarian regimes signals geopolitical realignment.

# Monopolistic Concerns Surrounding Starlink

## First-Mover Advantage in Low Earth Orbit

- SpaceX's significant advantage with 7,000 satellites in orbit.
- Competitors like OneWeb and Amazon's Project Kuiper lag behind.

## Economic Problems of Competition and Dependency

- Dominance raises questions about competition, pricing, and dependency.
- Private companies wielding influence over critical infrastructure is concerning.
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# Economic Value vs. Geopolitical Control

## Digital Sovereignty vs. Market Dominance

- "Digital Sovereignty" represents profitable telecommunications and strategic independence.
- Starlink operates in a "Market Dominance" scenario with high economic potential but limited control.

## Strategic Assets and Marginal Presence

- India's limited satellite capacity is a "Strategic Asset."
- Emerging players like Amazon's Kuiper project represent a "Marginal Presence."

# Towards Digital Sovereignty for India

## The Role of ISRO and Indigenous Capabilities

- ISRO is developing indigenous satellite capabilities for "Digital Sovereignty."
- Significant investment and time are required to achieve this goal.

## Managed Dependency and Local Partnerships

- Airtel and Jio's partnership model preserves some sovereignty.
- Technology transfer provisions and local data storage requirements protect interests.

## The Absence of BSNL in Partnerships

- BSNL's absence from partnerships is notable.
- As a state-owned enterprise, BSNL could have provided broader reach and oversight.

# Challenges and Opportunities in Technology Evolution

## Global Internet Governance and Geopolitical Dimensions

- Partnerships could pave the way for a new model of global internet governance.
- Balancing technological pragmatism with strategic autonomy is crucial.

## Conclusion

- The partnership between SpaceX, Airtel, and Jio is a step towards bridging India's connectivity gap.
- Raises questions about sovereignty, economic dependency, and global internet governance.
- The challenge is to harness connectivity without compromising autonomy.



# Why are undersea cables important?

What are undersea cables? How do they connect internet networks globally? What is India's subsea cable ecosystem? What are some of the challenges in laying the cables in India? Why is India considered vulnerable to disruptions? How can it be improved?

## EXPLAINER

Aroon Deep

### The story so far:

India is getting new cable landing systems coming online gradually. The latest addition is Airtel's 2Africa Pearl system, which has investments from Facebook parent Meta, adding 100 terabits per second of capacity to India's international bandwidth. Earlier this year, the SEA-ME-WE-6 cable was also landed in Chennai and Mumbai.

### What are undersea cables?

Undersea cables are the main link connecting the world's internet networks. They connect internet service providers and telecom operators everywhere with those in other countries. These cables are a few inches thick and are heavily padded to withstand the hostile environment of the sea floor. Inside, strands of fiber optic cable – similar to those that connect modern telcos' towers and routers – provide massive capacity for large volumes of data to quickly crisscross the earth.

At each "landing point," usually a manhole covered with a lid and then topped with sand, these cables make landfall and go further inland to connect to a "landing station," where they become accessible to major networks. These systems are critical to the modern information society. "There are about 600 cables, as per Goldman Sachs," said Amajit Gupta, CEO of Lightstorm, a network provider at the first Sub-Sea Cable Systems Conference in Delhi. "90% of data, 80% of world trade, and about \$10 trillion of financial transactions, as well as secure government information, move through these cables. That's the impact this infrastructure has."

Each modern cable has several hundred gigabits per second of capacity, and can support thousands of telecom users. The other side of undersea cables



**Powering up:** More cables land in Singapore, a small city-state, than they do in all of India. FILE PHOTO

well-mapped network of cables and towers that bring connectivity from the coast to people.

### Does India have enough undersea cables?

India has two major hubs of cable landing sites: Mumbai and Chennai. "Practically speaking, 95% of subsea today goes into a small six-kilometre patch in Versova, Mumbai," Mr. Gupta said.

Many of the cables connected to Chennai also land in Mumbai. In total, 17 cable systems land at some point in India. India also has two domestic cable systems – the Chennai Andaman and Nicobar Islands (CANI) cable to provide high-speed connectivity to the islands, and the Kochi Lakshadweep Islands project.

Cables take several months, even years, to plan out and lay, at a cost of millions of dollars. Most cables in countries with well-developed internet infrastructure are able to commission capacity years before it is required. As such, most international internet traffic in India is largely served by existing capacity.

Anil Tandan, the Director General of the Broadband India Forum, said that this must not hold forever. "Well, there are

of the existing cable infrastructure's sufficiency. "The capacity may be adequate at this moment of time, but the way the data [traffic] is growing, one has to keep in mind that the capacity may not be adequate as we go along."

Aruna Sundararajan, a former Union IT and Telecom Secretary and current chairperson of the BIF, said, "It is significant to note that India's share presently constitutes around 1% and 3% respectively for cable landing stations and subsea cable systems" respectively.

### What are some risks surrounding undersea cable deployment in India?

More cables land in Singapore, a small city-state, than they do in all of India, making India vulnerable to the consequences of cable cuts at sea. "If there is a disruption at the Red Sea, it pretty much brings down 25% of India's Internet in our estimate," Mr. Gupta said. "It's not a theory because it just happened about two years back." He was referring to the cuts that brought down subsea cables in the Bab-el-Mandeb Strait, likely caused by strikes by Houthi rebels in Yemen. That strait is a critical narrow passage through which dozens of subsea cables pass.

These cuts – some of which happened

internet experience so far, thanks to excess capacity built into other networks. But that may not always be the case. If several cables in the Red Sea are damaged, large parts of the internet may stop working, and there is only so much data that can be rerouted through other cable systems.

"Traditionally, most subsea corridors strangely have followed the trade routes of the past," Mr. Gupta said. "Rarely have subsea routes been built which are different from shipping routes, because back in the day, it was easier to follow the trade routes to be able to lay down your cables and make it work."

### What can be done to bolster India's subsea cable infrastructure?

For one, the companies laying subsea cables complain of excessive permissions needed to land a single cable in India. "By last count, about 51 permissions were needed, beyond just the Department of Telecom, including the Home Ministry, Department of Fisheries, the Environment Ministry, local municipalities," and so on, Mr. Gupta said.

"If I have an 8,000-mile point-to-point transoceanic system starting tomorrow, I can guarantee you where I'm going to spend 80% of my time and effort," said Scott Cowling, a senior Meta executive who manages the social media conglomerate's global network infrastructure. "And that's going to be in 24 miles of territorial waters at either end."

In addition to streamlining regulations, securing these cables is also important. "Fishing trawlers break my cables all the time," complained Rahul Vatts, Bharti Airtel's chief regulatory officer.

India depends on foreign repair vessels with long permission processes for them to begin work in Indian waters. "India currently does not have the requisite subsea cable repair ships and cable storage depot capacity that we need," Ms. Sundararajan said, calling for more domestic investment in cable repair

## THE GIST

India has 17 international cable systems, mainly landing in Mumbai and Chennai, along with two domestic cable systems connecting island territories. However, its share in global subsea cable infrastructure remains low.

India's internet is highly dependent on a few key landing sites, making it vulnerable to disruptions such as Red Sea cable cuts. Fishing trawlers and the lack of domestic cable repair ships further threaten network stability.

Laying undersea cables in India requires around 51 permissions from various authorities, delaying projects. Experts call for regulatory reforms, more cable landings, and local investment in repair and maintenance facilities.









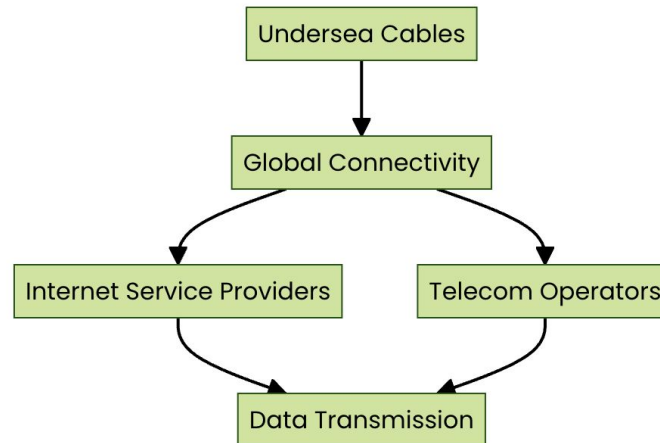


# India's Undersea Cable Revolution

## Introduction to Undersea Cables

- Undersea cables are the backbone of global internet connectivity, lying on the ocean floor and connecting countries.
- These cables are crucial for enabling global communication and are rapidly evolving in India to enhance international bandwidth

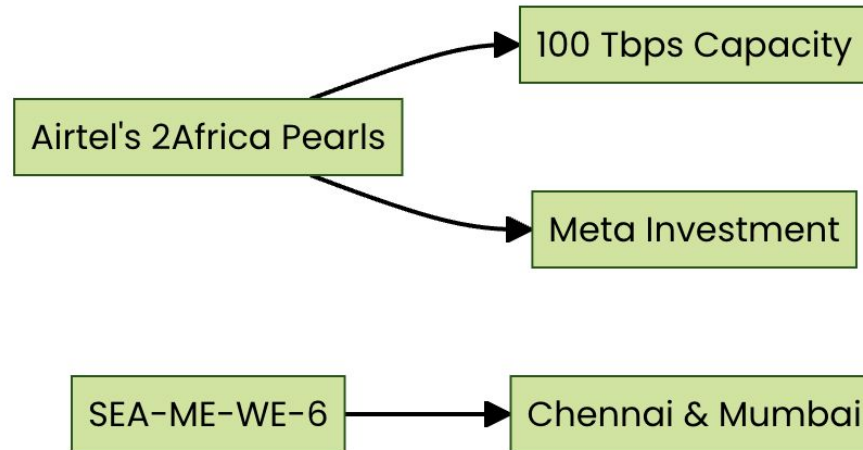
Conceptual Overview:



## Recent Developments in India's Cable Infrastructure

- **Airtel's 2Africa Pearls System:** A significant addition with investments from Meta, adding 100 terabits per second of capacity.
- **SEA-ME-WE-6 Cable:** Recently landed in Chennai and Mumbai, enhancing connectivity.

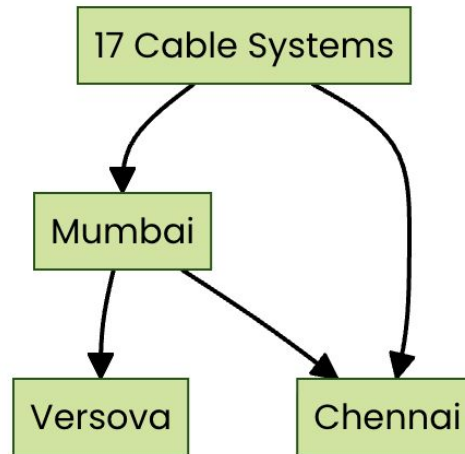
### Infrastructure Expansion:



## Current State of India's Undersea Cables

- **Major Hubs:** Mumbai and Chennai are key landing points, with 95% of cables landing in Versova, Mumbai.
- **Capacity Needs:** Current capacity may soon be outpaced by data traffic growth, necessitating further investment.

### Cable Landing Hubs:

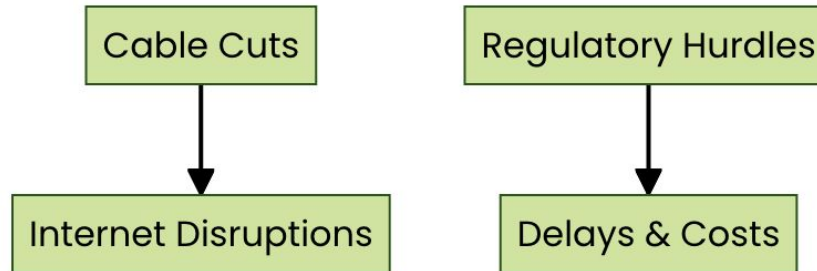




## Risks and Challenges in Undersea Cable Deployment

- **Vulnerability to Cable Cuts:** Limited cables increase susceptibility to disruptions.
- **Regulatory Hurdles:** Up to 51 permissions required, causing delays and increased costs.

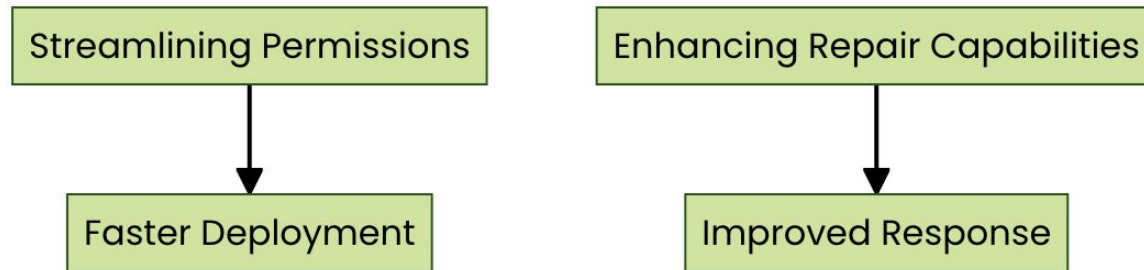
### Challenges Overview:



## Strengthening India's Subsea Cable Infrastructure

- **Streamlining Permissions:** Simplifying processes can expedite deployment and encourage investment.
- **Enhancing Repair Capabilities:** Investing in domestic repair ships and facilities is crucial for quick response times.

### Infrastructure Strengthening:



## Conclusion

- India is poised for a transformation in its undersea cable infrastructure with new systems like Airtel's 2Africa Pearls and SEA-ME-WE-6.
- Addressing challenges such as vulnerability, regulatory hurdles, and repair capabilities is essential for sustainable growth.

# Livestock theft key to Africa's jihadist economy

**Agence France-Presse**

ABIDJAN

Musa was asleep in the village of Dusuman in north-east Nigeria when he was awoken by a sharp burst of gunfire and Boko Haram stole his main source of livelihood—his livestock.

“They came at about one in the morning and started firing in the air,” said the Fulani herdsman, whose name AFP has changed for security reasons. “My family and I fled into the bush. The jihadists took 36 of my cows and 40 sheep,” he added.

Livestock theft provides Boko Haram with a major source of revenue, as members resell some of the animals at local markets to support their operations in the Lake Chad region.



**New players:** Thefts have become violent with the entry of jihadists into the field. AFP

The method of criminal financing is also used by other jihadist groups in the Sahel region, where livestock is a coveted resource.

“It’s an economy that feeds the conflict,” Flore Berger, a researcher with the Global Initiative against Transnational Organized Crime (GI-TOC), told AFP.

In Burkina Faso, sources

in the Ansarul Islam group “have declared earning, depending on the period, between 25 and 30 million CFA francs (\$41,100 to \$49,400) a month through livestock theft in the regions where they operate”, Ms. Berger said in a study.

Nigeria and Mali, which are the leading and second-leading livestock ex-

porters in the region ravaged by jihadist violence, are particularly affected, she added.

## ‘Laundered’

“The practice has been happening for centuries across the Sahel,” added the study, noting that the thefts were once “almost cultural” and widely accepted. But in the last 15 years, jihadists have got in on the act and thefts have become violent operations in which livestock farmers have sometimes been kidnapped or killed.

In Niger last year, “more than 600” animals were stolen by jihadists in a hamlet in the Ouallam region, near the Malian border, and an owner was killed, a local source said.

In the Lake Chad basin of northeast Nigeria, Boko

Haram is the main perpetrator of thefts. Its splinter group, the Islamic State West Africa Province (IS-WAP), instead prefers to impose taxes on local livestock farmers, said Nigerian GI-TOC researcher Kingsley Madueke.

In the central Sahel—Mali, Niger and Burkina Faso—the Al-Qaeda-linked Group for the Support of Islam and Muslims (JNIM) dominates the illicit trade due to the vast territory under its control and its local networks.

Stolen livestock is then sold through well-established channels involving agents, intermediaries, transporters, traders, butchers or “corrupt” local officials, Ms. Berger said.

“Through these ‘commercial partners’, the jihadists have access to intelli-

gence and sustain themselves in the forests,” said William Assanvo, a researcher from the South Africa-based Institute for Security Studies.

Stolen animals from Mali, for example, are “laundered” by being mixed with herds of legal livestock then sent to countries such as Ivory Coast, Burkina Faso or Niger, Ms. Berger further said.

As such, Mr. Madueke said there was a need to target auxiliary networks.

The cross-border nature of the illicit trade also requires regional cooperation that is not always easy given the geopolitical situation in west Africa.

According to the researchers, armies in the Sahel, bandits, civilian militia and rebel groups in Mali also steal livestock.












# Livestock Theft and Terrorist Financing in the Sahel.


## Overview of Livestock Theft

 Incident: Boko Haram stole 36 cows and 40 sheep from a Fulani herdsman in northeast Nigeria.

 Funding Source: Livestock theft is a major revenue stream for Boko Haram and other jihadist groups, with earnings reaching up to 30 million CFA francs monthly.


## Cultural and Economic Implications


 Cultural Shift: Once a cultural practice, livestock theft has become violent, involving kidnappings and killings over the past 15 years.


 Trade Networks: Stolen livestock is sold through networks of intermediaries, supporting jihadist operations and intelligence gathering.



## Regional Impact and Response

 **Affected Regions:** Nigeria and Mali, key livestock exporters, are heavily impacted, with trade extending to Ivory Coast and Burkina Faso.

 **Targeted Action:** Researchers stress the need to disrupt auxiliary networks in the livestock trade to weaken jihadist financing.

 **Cooperation Needed:** The cross-border nature of the trade requires regional cooperation, complicated by West Africa's geopolitical challenges.

**Summary:** Livestock theft by groups like Boko Haram has evolved into a violent, profitable operation in the Sahel, highlighting the need for regional cooperation to combat the illicit trade

## Full bloom



Illuminated cherry blossom trees seen on the banks of the Meguro river in Tokyo on Wednesday, as the flowers reached full bloom, painting the city in shades of pink and drawing crowds to iconic spots such as Ueno Park and Shinjuku Gyoen. GETTY IMAGES

# Mapping

The Meguro River is a river which flows through **Tokyo, Japan**. Its tributaries include the Kitazawa River and the Karasuyama River. The river flows into **Tokyo Bay**



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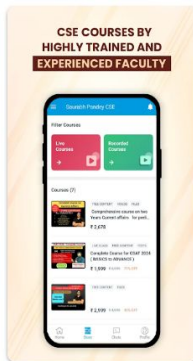
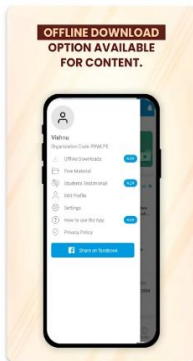
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