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# Surveillance reform is the need of the hour

The proposed legislation related to the personal data protection of citizens fails to consider surveillance

**Anushka Jain  
Tanmay Singh**

On December 20, a U.S. court ruled that Israel's NSO Group was liable for installing Pegasus, a spyware suite, on the phones of targeted individuals through WhatsApp. In an article dated July 20, 2021, Anushka Jain and Tanmay Singh argue the growing need for surveillance reform, stressing the importance of privacy protections and the risks of unchecked surveillance practices.

It is worth asking why the government would need to hack phones and install spyware when existing laws already offer impunity for surveillance. This unsettling query arises on the basis of reports emerging from a collaborative investigation by journalists from around the world, including from India's *The Wire*, titled the 'Pegasus Project'. Reports say that over "300 verified Indian mobile telephone numbers, including those used by Ministers, Opposition leaders, journalists, the legal community, businessmen, government officials, scientists, rights activists and others", were targeted using spyware made by the Israeli firm, NSO Group.

## Threat to press freedom

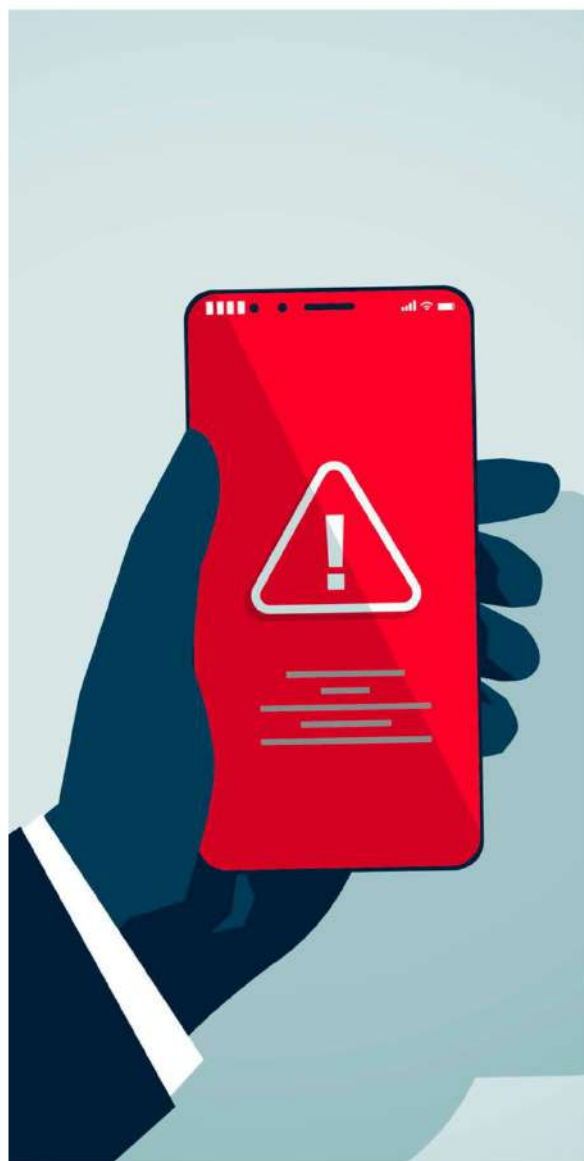
Subsequent reporting showed that the Pegasus spyware had been used to target 37 phones, of which 10 belonged to Indians. Amnesty International's Security Lab was then able to confirm that Pegasus was used to compromise the phones of former journalist of *The Indian Express* Sushant Singh, former editor of the *Economic and Political Weekly* Paranjay Guha Thakurta, former *Outlook* journalist S.N.M. Abdi, and *The Wire*'s two founding editors Siddharth Varadarajan and M.K. Venu.

These revelations highlight a disturbing trend with regard to the use of hacking software against dissidents and adversaries. In 2019, similar allegations were made about the use of Pegasus against journalists and human rights activists. Most of them were situated in Maharashtra and Chhattisgarh as the hack targeted lawyers related to the Bhima Koregaon case and Dalit activists, respectively. However, despite repeated calls for investigations, the relevant State governments failed to do so.

A significant number of Indians reportedly affected by Pegasus this time are again journalists. This is not surprising since the World Press Freedom Index produced by Reporters Without Borders has ranked India 142 out of 180 countries in 2021. What is shocking, however, is that the press requires (and in democracies is afforded) greater protections on speech and privacy. Privacy and free speech are what enable good reporting. They protect journalists against threats of private and governmental reprisals against legitimate reporting. This has been recognised in Supreme Court decisions. In the absence of privacy, the safety of journalists, especially those whose work criticises the government, and the personal safety of their sources is jeopardised. Such a lack of privacy, therefore, creates an aura of distrust around these journalists and effectively buries their credibility.

## Problematic provisions

The government, in its purported undated and unsigned response, relied on existing provisions of law under the Indian Telegraph Act of 1885 and the Information Technology (IT) Act of 2000. Even without the use of Pegasus or any



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other hacking software and surveillance, these provisions are problematic and offer the government total opacity in respect of its interception and monitoring activities. While the provisions of the Telegraph Act relate to telephone conversations, the IT Act relates to all communications undertaken using a computer resource. Section 69 of the IT Act and the Interception Rules of 2009 are even more opaque than the Telegraph Act, and offer even weaker protections to the surveilled. No provision, however, allows the government to hack the phones of any individual since hacking of computer resources, including mobile phones and apps, is a criminal offence under the IT Act. Nonetheless, surveillance itself, whether under a provision of law or without it, is a gross violation of the fundamental rights of citizens.

The very existence of a surveillance system impacts the right to privacy and the exercise of freedom of speech and personal liberty under Articles 19 and 21 of the Constitution, respectively. It prevents people from reading and exchanging unorthodox, controversial or provocative ideas. Regardless of whether a citizen knows that their email is being read by the government, the perceived danger, founded on reasonable suspicion that this may happen, itself impacts their ability to express, receive and discuss such ideas.

There is also no scope for an individual subjected to surveillance to approach a court of law prior to or during or subsequent to acts of surveillance since the system itself is covert. In the absence of parliamentary or judicial oversight, electronic surveillance gives the executive the power to influence both the subject of

surveillance and all classes of individuals, resulting in a chilling effect on free speech. Constitutional functionaries such as a sitting judge of the Supreme Court have reportedly been surveilled under Pegasus without any checks outside the executive wing of government. Vesting such disproportionate power with one wing of the government threatens the separation of powers of the government. In response to a Right to Information (RTI) request in 2013, the Central government had revealed that 7,500 to 9,000 orders for interception of telephones are issued by it every month. However, RTI requests for such information are now denied citing threats to national security and to the physical safety of persons.

The government, in its purported response, stated that any surveillance which takes place happens through a "due process of law". However, the existing provisions are insufficient to protect against the spread of authoritarianism since they allow the executive to exercise a disproportionate amount of power. Such surveillance, when carried out entirely by the executive, curtails Articles 32 and 226 of the Constitution (empowering the Supreme Court and High Courts, respectively, to issue certain writs) as it happens in secret. Thus, the affected person is unable to show a breach of their rights. This violates not only the ideals of due process and the separation of powers but also goes against the requirement of procedural safeguards as mandated in *K.S. Puttaswamy (Retd) v. Union of India* (2017).

## Role of JUDICIARY

Thus, in order to satisfy the ideal of "due process of law", to maintain an effective separation of powers and to fulfill the requirements of procedural safeguards and natural justice, there needs to be oversight from another branch of the government. Only the judiciary can be competent to decide whether specific instances of surveillance are proportionate, whether less onerous alternatives are available, and to balance the necessity of the government's objectives with the rights of the impacted individuals. The need for judicial oversight over surveillance systems in general, and judicial investigation into the Pegasus hacking in particular, is also essential because the leaked database of targeted numbers contained the phone number of a sitting Supreme Court judge, which further calls into question the independence of the judiciary in India.

Surveillance reform is the need of the hour in India. Not only are existing protections weak but the proposed legislation related to the personal data protection of Indian citizens fails to consider surveillance while also providing wide exemptions to government authorities. When spyware is expensive and interception is inefficient, the individuals surveilled will be shortlisted by priority and perceived threat level to the existing regime. But as spyware becomes more affordable and interception becomes more efficient, there will no longer be a need to shortlist individuals. Everyone will be potentially subject to state-sponsored mass surveillance. The only solution is immediate and far-reaching surveillance reform.

Anushka Jain is the Associate Counsel (Surveillance and Transparency) and Tanmay Singh is the Litigation Counsel at Internet Freedom Foundation

# What is Australia's Online Safety Amendment about?

How will ARSMPs ensure compliance with the new age restrictions?

R.K.Vij

## The story so far:

Australia's House of Representatives recently passed the "Online Safety Amendment (Social Media Minimum Age) Bill, 2024" which imposes obligation on certain social media platforms to take reasonable steps to prevent children under 16 years of age from having an account.

## What is the new law about?

The object of the amendment (a new Part 4A- social media minimum age inserted in Australia's existing the Online Safety Act of 2021) is to 'reduce the risk of harm to age-restricted users from certain kinds of social media platforms'. The age-restricted user shall mean 'an Australian child who has not reached 16 years'.

The age-restricted social media platforms (ARSMP) affected by the proposed amendment would cover (with

some exclusions) an electronic service which enables online social interaction between two or more end-users, and allows end-users to post material on the service.

The Australian Minister of Communication clarified that the government expects the ARSMP will, at minimum, include 'TikTok, Facebook, Snapchat, Reddit, Instagram, X, among others.

## How will the ban be implemented?

The law proposes that the providers of ARSMPs 'must take reasonable steps to prevent age-restricted users having accounts with the age-restricted social media platforms'. Failing to meet this requirement may result in a maximum civil penalty of \$49.5 millions. However, what is meant by 'reasonable steps' is not defined within the Bill.

It shall be the duty of the eSafety Commissioner to formulate, in writing, guidelines for taking reasonable steps to prevent age-restricted users having

accounts with age-restricted social media platforms and to promote those guidelines.

The proposed restriction will not take place earlier than 12 months after the proposed day of enforcement. The affected stakeholders shall be consulted and government's age assurance trial will guide the industry on which age assurance technologies would be considered 'reasonable' and consistent with minimum age obligation. However, it was confirmed that all account holders on ARSMPs will have to verify their age.

The law does not otherwise place any obligation on ARSMPs to prohibit people under the age of 16 from accessing content on their platforms. There is no civil penalty for parents who provide access to ARSMPs for children under 16.

## What are privacy concerns?

It has been observed that 'age assurance technologies can pose privacy risks due to the type and amount of data they collect, store, use, and share'. With regard to

privacy concerns, the proposed law will establish privacy obligations where an 'entity' holds personal information about an individual that was collected for the purpose of taking reasonable steps to establish identity. Penalties may be imposed under the Privacy Act, 1988 if the entity uses or discloses information, without falling within one of the exceptions under the Act.

There will also be an obligation on entities to destroy the collected information 'after using or disclosing it for the purposes for which it was collected. The government also announced its intention to legislate a 'Digital Duty of Care' to 'place the onus on digital platforms to proactively keep Australians safe and better prevent online harms.'

## Is social media harmful to children?

Emerging research indicates that social media may impact children's mental health. Despite various benefits, the risks of social media are also well acknowledged.

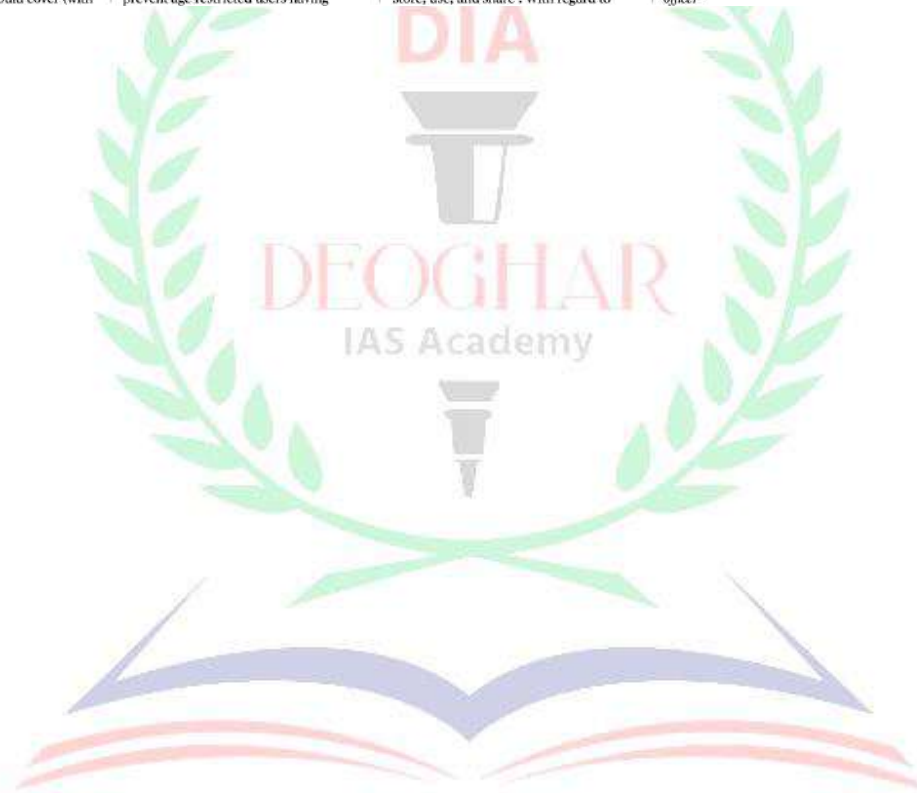
However, a blanket ban to prohibit children from using social media is not considered to be the most advantageous solution. Some researchers and academics expressed concern 'that a ban is too blunt an instrument to address risks effectively'. The Australian Greens criticised saying that the legislation was 'rushed, reckless and goes against the evidence'.

R.K. Vij, a former Indian Police Service officer

## THE GIST

Australia's Online Safety Amendment (Social Media Minimum Age) Bill, 2024, mandates that platforms take reasonable steps to prevent children under 16 from creating accounts, with penalties for non-compliance reaching \$49.5 million.

While aimed at reducing harm to children, the law raises privacy concerns over data collection for age verification, with safeguards requiring the destruction of personal data after use and penalties for misuse under the Privacy Act, 1988.



# U.S. and China renew S&T Agreement

What new measures were added to the Agreement in 2024? What does this indicate about the evolving relationship between the U.S. and China?  
How has the U.S. benefited from its collaboration with China under this Agreement?

## EXPLAINER

Krishna Ravi Srinivas

### The story so far:

**I**n December 13, China and the U.S. agreed to extend their Agreement on Co-operation in Science and Technology for an additional five years, effective from August 27, 2024, and also signed a protocol to amend it. Observers have welcomed the development as an affirmation of science and technology cooperation between the two major powers. The Agreement was first signed on January 31, 1979, by Chinese leader Deng Xiaoping and U.S. president Jimmy Carter at a time when both countries had established diplomatic relations and agreed to cooperate on agricultural research and technology. Since then, the Agreement has been renewed every five years while expanding in scope. The Agreement is governed by the U.S.-PRC Joint Commission on Scientific and Technological Cooperation. The U.S. and China each appoint co-chairs and an agency from each country is nominated as the 'executive agent'. There are also additional protocols between agencies and 40 sub-agreements in different areas, from agriculture to nuclear fusion.

### Why do bilateral S&T agreements matter?

Bilateral science and technology agreements have been key to promote cooperation in these fields. Often there are specific agreements or cooperation pacts as part of a larger engagement framework. While these agreements don't mention specific investments in science and technology, they often pave the way for forms of cooperation that aren't confined to state institutions. They also facilitate joint research, mobility between the countries for students and scientists, encourage institutional cooperation, and set up bilateral research centers. India has



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such agreements with 83 countries.

But while countries sign such agreements as part of routine engagements, both countries need to have the capacity and intentions to pursue the cooperation earnestly for the instruments to succeed. Token initiatives have never cut it. In this regard, the Agreement between China and the U.S. is probably the most successful of its kind.

### What does the renewed agreement stipulate?

Conflicts between the U.S. and China, particularly over technology exports to China and concerns about China overtaking the U.S. in science and technology indicators, have become sticking points of late. To address them, the newly amended Agreement has measures to enhance provisions for researcher safety and data reciprocity.

The collaboration will henceforth be confined to the intergovernmental level, to basic research, and to previously identified themes of mutual benefit. The instrument will also exclude cooperation in critical and emerging technologies to assuage stakeholders that China won't extract disproportionate benefits, allegedly at the U.S.'s expense.

Indeed, experts who reviewed the Agreement have flagged China's ability to make better use of the research ecosystem and concerns about intellectual property rights. One report by the Congressional Research Service stated: "In 2017, U.S. patent and trademark officials identified over 400 [Chinese] patents tied to [Agreement] projects that [China] commercialised without U.S. commercial benefit"

So, before the Agreement was renewed this year, the U.S. was faced with three options: to renew it as usual for five years, to rescind it or to renew it with new measures to restrict the scope and add additional conditions. The U.S. opted for the third, implying that while there are deep concerns about the Agreement's continued usefulness to the U.S., the outgoing administration would rather not allow it to altogether expire or rescind it.

### What has the U.S. gained?

China expanded its cooperation in science and technology in the 1970s by signing agreements with the U.S. and the European Union. Until then these deals had been restricted to some east European countries and the erstwhile Soviet Union. Between then and now, the

country has emerged as a strong contender for the leadership of global science.

According to one February 2024 paper, China's research and development (R&D) spending increased from \$375 million in 1979 to \$442 billion in 2021, second only to the U.S. In 1985, there were 2,770 Chinese undergraduate students in the U.S. and 109,525 in 2000. Both the number of papers coauthored by Chinese and U.S. authors and the variety of fields in which this has happened have increased. On the back of these data, Deborah Seligsohn of the Centre for Strategic and International Studies, Washington, DC, has argued that the U.S. wasn't poorly served by the Agreement and has received significant value as well.

For the same reasons, the incoming Trump administration isn't likely to rescind the new agreement, although it might attach more conditions and further limit its scope. It will still be valuable to China for keeping the door to non-zero cooperation in science and technology, including to promote the mobility of its researchers, open. Likewise, the U.S. could maintain a handle on China's rise vis-à-vis science and technology rather than lose all leverage.

In all, the Agreement teaches us that while bilateral science and technology agreements are important, making the best use of them demands capacity-building and sustained investment in R&D. Otherwise the participating countries won't be able to absorb the principal advantages such agreements generate. The Agreement catalysed China's transformation from a 'junior partner' in 1979 to a formidable competitor in 2024. Even if the U.S. deems its success to be 'extreme', the Agreement forces the two countries to respond to each other's concerns using the language of science and technology and cooperation.

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## THE GIST

▼ The U.S. and China renewed their Agreement on Co-operation in Science and Technology for five years with new amendments addressing researcher safety and data reciprocity.

▼ The Agreement catalysed China's rise from a junior partner in 1979 to a formidable global competitor in science and technology, marked by massive growth in R&D spending, student exchanges, and research output.

▼ While Trump's administration might scrutinise the Agreement more closely, it recognises the importance of maintaining cooperation with China, particularly to monitor and manage China's technological advancements.



# The lapses in the disaster management Bill

**T**he Disaster Management (Amendment) Bill, 2024, raises serious concerns. Instead of filling in the gaps in the Disaster Management Act (DMA), 2005, the Bill has removed scope for participatory governance, accountability, and efficiency from the Act.

## The lapses

First, the semantics. The Bill uses top-down guarded terminology such as 'monitor' and 'guidelines'. Instead, terms such as 'supervision' and 'direction' could have established greater trust and bonding with communities and local governments. On the other hand, in global legal research documents, such as the Yokohama Strategy, the Hyogo Framework for Action, and the Sendai Framework for Disaster Risk Reduction, local communities are known as the 'first responders' to disasters. It is imperative to build on the capacities and wisdom of local communities.

Second, even though the Bill defines a 'hazard', 'resilience', and 'vulnerability', these definitions are mere mechanical words or inconsequential without acknowledging the substantive roles of local communities, panchayats, wards and NGOs in disaster management. Whether during Cyclone Aila in 2009 in the Sunderbans, the Kedarnath glacial lake outburst flood of 2013, or the floods in Kerala in 2018, villagers and fisherfolk began rescuing people before the National Disaster Response Force or Coast Guards could reach the victims.

The Bill is silent on intersectional discrimination. Whenever authorities are open to a just approach to discrimination and vulnerability, the datasets change phenomenally. Ignoring intersectional vulnerability even after 20 years of the Act weakens the Bill's claim to be holistic and inclusive. Women, the disabled, "lower" castes, and LGBTQIA communities may not show the several layers of discrimination



**Amita Singh**

Founder Chairperson, Special Centre for Disaster Research, and former Professor, Centre for Law and Governance, JNU

Instead of filling in the gaps in the Disaster Management Act, 2005, the Bill has removed scope for participatory governance, accountability, and efficiency from the Act

they suffer.

There is also nothing in the Bill on the performance evaluation of district authorities. If the authorities had failed to be prepared for a disaster and then a disaster strikes, sometimes they try to take attention away from their dereliction of duty and bring focus to individual philanthropy efforts. This makes the ground fertile for political poaching of the electorate.

The Bill excludes 'law and order' from the Act. It clarifies that, 'the expression "man made causes" does not include any law and order related matter'. Why then does it bring the State Director Generals of Police into the State Executive Committees (SECs)?

Accountability is the next casualty. Sections 12 and 13 of the DMA, which covered the minimum standards of relief for disaster victims and the possibility of loan repayment relief, have been omitted. Similarly, Section 19, which demanded that State governments follow guidelines on minimum standards of relief, has also been dropped. These Sections also carried special provisions for widows, orphans, the homeless, and provided ex gratia assistance on account of loss of life as also assistance on account of damage to houses and for restoration of means of livelihood. There is no replacement for this in the Bill.

The DMA had made some mandatory requirements for better enforcement of disaster management provisions by various departments and ministries under the Government of India. Section 35(2b) and Section 35(2d) that ensured integration and preparedness in the plans have been dropped in the Bill. At another place, the SEC no longer has to do basic homework for preparedness; sub clauses (2a) and (2b) of Section 22 are deleted in the Bill. There is little in terms of good governance in the Bill as most of its

measurable indices for performance assessment of officials in the field are fuzzy or inaccurately mentioned.

The Bill also suffers from speciesism. The thousands of animals which die after every disaster are not even mentioned.



The District Disaster Management Authorities (DDMA) seem to have little responsibility in implementing the Animal Birth Control (ABC) Rules, 2023,

brought out by the same government. This gap fails the Rules as well as the preparedness for a disaster.

The Bill suggests an Urban Disaster Management Authority (UDMA) under Section of 41A. What brought the need for this additional authority? It is unclear. The Municipal Corporation is the highest revenue generator for any city as it controls land, buildings, builders, and property taxation. But in what way can a Municipal Corporation improve disaster management if it encourages urban flooding by allowing encroachments over aquifers, water bodies, city forests, river beds and markets?

## Regional collaboration

Finally, the world is grappling with zoonotic and epizootic diseases. Given this scenario, a regional plan of action through increased trust, collaboration, and emergency strategies was awaited. The Bill could have mentioned regional groupings such as SAARC, BIMSTEC, and BRICS, to be approached in the event of a disaster. The Bill was expected to encourage international collaboration, democratisation, and decentralisation of the role and responsibilities of the National Disaster Management Authority. It could have at least referred to the 2011 SAARC Agreement on Rapid Response to Natural Disasters. Given the porous boundaries of South Asian countries, to ignore regional collaboration is a serious lapse.

# The lessons from a spectrum of areas

The 2004 tsunami affected a number of countries, making it a truly global disaster. There are six critical lessons we must consider.

First, the importance of mangroves in providing natural protection to coastal areas – they serve as vital buffers against waves. Unfortunately, the significant destruction of mangroves in India and other countries – to promote shrimp farming, meet basic wood and fuel needs, and for tourism – has disrupted the natural ecosystem. In many cases, the construction of artificial barriers (brick and mortar walls), may actually increase people's susceptibility to the damaging effects of waves.

## Social changes

Second, keeping common resources such as beaches in the public domain is crucial. In Thailand, the privatisation of coastlines during the 1980s and 1990s allowed private interests to develop hotels and leisure activities, displacing local communities. This led to significant changes in labour, including the rise of the sex industry. Additionally, a large section of the population transitioned to informal sector jobs. Thailand's economy became highly vulnerable to global fluctuations, and is a lesson for India.

Third, the tsunami created winners and losers in the market. Rents, the price of land, goods, and services all rose, benefiting only asset owners and service providers. The disruption of local markets led to the replacement of local products with externally sourced goods, disrupting interdependent local economies. A number of people transitioned from traditional livelihoods to casual, low-paid labour. The push for mechanised fishing became particularly noticeable, displacing traditional artisanal fishing practices using catamarans. The degradation of natural resources intensified, leading to over-fishing, waste accumulation, loss of fish



**Pushendra Kumar**

a former professor at the Tata Institute of Social Sciences, Mumbai. He worked in tsunami relief and rehabilitation in affected countries

A response system needs to be well-rounded, looking at every aspect from natural systems to social structures

breeding areas, and further erosion of beaches and soil. Addressing these economic processes of production, consumption, and exchange – aggravated by privatisation and liberalisation – is a challenge. Unfortunately, no studies exist to measure these patterns.

## A worsening of inequalities

Fourth, there are lessons to be learned about relief efforts and long-term rehabilitation. It is not surprising that the social structures that create and sustain discrimination, injustice, and exclusion in society continue doing so during and after disasters. In a highly stratified society such as India, relief and rehabilitation efforts can often reinforce and even exacerbate pre-existing inequalities, discrimination, and marginalisation.

Evidence from tsunami-affected countries suggests that social divisions significantly affected access to relief and rehabilitation services. There was a notable tendency to overlook the needs of vulnerable groups, including labourers, Dalits, tribes, immigrants, ethnic minorities, widows, and single women, in the distribution of relief and rehabilitation unless some vocal groups advocated their cause. In Thailand, undocumented Burmese or Lao migrants, many of whom suffered serious injuries and required urgent medical attention, had to go into hiding to avoid arrest. In Sri Lanka, Tamil minorities in the east and northern regions received significantly less assistance despite suffering much greater devastation.

Furthermore, asset-based damage assessment tended to favour better-off segments of the affected. Within India's fishing community, labourers engaged in fishing, retail businesses, and ancillary activities continued to suffer until fishing activity resumed but received little compensation. In some communities, the relief

provided barely met basic subsistence needs, while others experienced excessive aid.

Fifth, gender-insensitive relief and rehabilitation policies often accentuated the vulnerability of women. In Indian fishing communities, women are typically involved in activities related to the processing and marketing of fish or in non-fishing jobs such as collecting shells or running food stalls. They rarely own property or assets in their name. During the relief and rehabilitation, in many cases, their livelihood needs were overlooked.

Relief and rehabilitation packages were distributed based on lists of affected persons prepared by the fish worker panchayats, leading to women lacking access to relief measures. Widows from fish worker communities faced difficulties in receiving assistance, as they did not possess identity cards issued by the Fisheries Department. The important takeaway is that social divisions must be carefully addressed at every stage of relief and rehabilitation.

## Engagement with local structures

Sixth, it is crucial for relief agencies to respect community-based local institutions, especially in coastal communities where organisation revolves around the concept of commons. Unlike agrarian or urban areas, democratic practices in fishing communities, such as *kuppams*, rely on active debate rather than elections. The tsunami revealed that outside agencies often imposed their own notions of democracy, which undermined local capacities and resilience by fostering individualism and dependence. While issues such as gender insensitivity exist within these communities, a critical and long-term engagement with local structures would be more effective in addressing these concerns rather than demonising them.



# Key partnership

## India and Kuwait are trying to deepen ties during a crucial period

**P** rime Minister Narendra Modi's visit to Kuwait, the first by an Indian Prime Minister since 1981, and nearly 12 years since a visit by the Kuwaiti Prime Minister to India, completed the loop in India's outreach to the Gulf countries. Kuwait is a key Gulf Cooperation Council (GCC) member. Half a million Indians work there, making them the largest expatriate community. This community has grown on the foundations laid by historical trade and travel ties – few would remember that Kuwait was an entrepôt for India's trading routes across West Asia, courtesy the British East India company; the Kuwaiti elite had homes in Mumbai and until 1961, when Kuwait won its independence, the Indian rupee was legal tender. Bilateral trade even today tops \$10 billion, which is considerable given Kuwait's smaller size. Kuwait is India's sixth largest crude supplier and fourth largest LPG supplier, meeting 3% of its energy needs. However, while people-to-people links and trade have continued, ties have lagged in strategic areas and defence cooperation, with some residual misgivings due to India's close ties with Saddam Hussein's Iraq. This is a gap that Mr. Modi's visit sought to bridge, with the announcement of a Kuwait partnership, the latest in India's strategic partnerships in the region. After talks with the Kuwaiti Emir, Sheikh Meshal Al-Ahmad Al-Jaber Al-Sabah, the two sides signed an MoU to institutionalise defence cooperation. Kuwait's highest honour, the Order of Mubarak Al-Kabeer, was conferred on Mr. Modi, cementing the importance of the visit.

The visit came at an important moment in the broader region. The continuing bombardment of Gaza by Israel, and attacks on Lebanon and Yemen are making West Asia peace a more fragile and distant proposition. The ouster of the Assad regime from Syria has also empowered Islamist radicals and could spell more violence. In addition, key Indian infrastructure and connectivity initiatives such as the I2U2 and IMEC may not see any further progress until the situation calms. The incoming Trump administration's domestic priorities in the U.S. and Europe's preoccupation with the Russia-Ukraine conflict will leave a possible vacuum of support and leadership for many of the world's other trouble spots. This is an important moment for India to strengthen bilateral ties with each of the countries in the region, and secure energy and connectivity lines, while ensuring the welfare and rights of over eight million Indians living and working there. Despite the Opposition's criticism of Mr. Modi's frequent visits abroad, New Delhi may find it needs to plan more such international standalone forays for the Prime Minister in the near future.

# How the 2004 Indian Ocean quake transformed tsunami science

The transoceanic reach of the 2004 tsunami was a big surprise. With no recorded history of any event of such magnitude, researchers had not anticipated it occurring along India's eastern seaboard. But in the two decades since, their understanding of tsunamis has leapt forward

Kusala Rajendran  
C. P. Rajendran

December 26, 2004, marks the 20th year since the 2004 Indian Ocean earthquake and tsunami. The tsunami generated by the quake of magnitude 9.1 was sourced off the Sumatran coast and was the third largest (by magnitude) in the world since 1900. The source was 30 km below the ocean floor, in the Sunda trench, where part of the Indo-Australian plate subducts beneath the Burma microplate, which is a part of the Eurasian plate.

The 2004 earthquake ripped through 1,300 km of the plate boundary, the fault tearing from Sumatra in the south to Coco Islands in the north. The quake was felt in Indonesia, Bangladesh, India, Malaysia, the Maldives, Myanmar, Singapore, Sri Lanka, and Thailand. It caused severe damage and killed hundreds in Northern Sumatra and in the Andaman and Nicobar Islands. The tsunami was most impactful on distant shores, affecting 17 countries lining the Indian Ocean.

In all, with an astounding death toll of around 227,000 plus 1.7 million more displaced, the 2004 tsunami is the deadliest in recorded history.

## Unprecedented magnitude

In less than six years, on March 11, 2011, a magnitude 9.1 earthquake hit the east coast of Japan, the largest ever recorded in that country. It generated a tsunami that reached as high as 39 metres and travelled up to 8 km inland. The twin disasters killed more than 18,000 people, displaced more than 500,000, and resulted in the Fukushima Daiichi nuclear power plant accident.

Although devastating tsunamis have occurred in the past – 1960 Chile and 1964 Alaska, for example – the 21st century events taught us important lessons. Particularly, the 2004 tsunami highlighted how vulnerable the world was to natural hazards. It landed like a bolt from the sky, hitting the most unexpected locations, and placed a premium on the importance of tackling disaster risk through preparedness and resilience.

As Margareta Wahlström, head of the UN Office for Disaster Risk Reduction (UNISDR), observed in a panel discussion: "Ten years after the Indian Ocean tsunami, the world has taken significant measures to make the world a safer place against disasters."

The 2004 tsunami surprised researchers and hazard managers alike with its transoceanic reach. With no recorded history of any event of such magnitude, the research community hadn't anticipated it occurring along India's eastern seaboard. The only previous tsunamis had occurred in 1881, caused by a large earthquake (magnitude 8) off Car Nicobar island, and another in 1853 due to the explosion of Krakatoa. These events produced only small sea surges as recorded by tide gauges at different points on the east coast.

However, in the two decades since 2004, researchers have made tremendous leaps in the scientific understanding of tsunami generation and the technical aspects of earthquake monitoring. The Indian Tsunami Early Warning Centre (ITEWC), established in 2007 by the Union Ministry of the Earth Sciences of the Government of India, is perhaps the most significant step in this direction.

Operating from the Indian National Centre for Ocean Information Services (INCOIS) at Hyderabad, ITEWC operates seismological stations as well as bottom pressure recorders and tidal stations across the Indian Ocean basin – all 24/7. These systems can transmit offshore and deep ocean tsunami observations that enable early warnings. Earthquake data from the stations operated by the India Meteorological Department (IMD) and 350 global stations are also available at INCOIS.

Ocean monitoring systems also pass data in real-time. In about 10 minutes, for example, the system can identify a potential tsunami-producing earthquake and issue tsunami alerts or warnings depending on the expected severity – for countries bordering the Indian Ocean, India is the fifth country in the world, after the U.S., Japan, Chile, and Australia, to have an advanced tsunami warning system of this kind.

## A new practice

The 2004 incident also spurred important new developments in research. The work of tsunami geology, pioneered by Brian Atwater of the U.S. Geological Survey, prompted researchers in Asian countries



Coastal devastation on Mitchal Island, part of the Andaman and Nicobar Islands, in 2005. The island lost some 90% of its population in the December 26, 2004, tragedy. AP/GETTY IMAGES

including India to search for evidence of tsunamis in history. Atwater's work along the Washington coast of the western U.S. had revealed evidence of an earthquake and tsunami in 1700, plus their predecessors. One fascinating part of this work was the use of land elevation changes caused by the earthquake, which left trees stressed or just killed them. Atwater had used the imprints of these effects to determine when some piece of land had been deformed and thus when it was suffering the effects of a tsunamigenic earthquake.

Inspections of subsided mangrove swamps revealed how the 2004 earthquake had rendered changes in elevation of up to 3.5 metres at some places along the Andaman and Nicobar Islands. Scientists also wondered if there could have been past events that also caused the mangroves to subside. As it turned out the 2004 earthquake had reopened the coffins of the past and exposed their skeletons, in the form of dead roots sticking out from tidal platforms during a low tide. Such roots exposed near Port Blair were used to infer that the last earthquake had occurred about a thousand years ago.

Excavations at Mahabalipuram, a port of the Pallava dynasty, unearthed evidence of a tsunami of the same vintage. It was the first proof of a pre-2004 tsunami reported by an Indian team. Researchers also sifted through sedimentary deposits along the islands and coastal areas of the mainland to find evidence of other ancient tsunamis, while learning to distinguish between tsunami and storm deposits.

This effort is a good example of how the 2004 tsunami prompted the science of tsunami geology to become a new practice, leading to many new research papers and doctoral theses. The demand for more knowledge about tsunamis also facilitated quantum leaps in the use of GPS systems and earthquake instrumentation. With funding from the Ministry of Earth Sciences, research institutes established several new stations



The No. 3 nuclear reactor of the Fukushima Daiichi nuclear power plant burning after the earthquake and tsunami triggered an explosion. Satellite image taken March 14, 2011. OUTLINE

along the Andaman and Nicobar Islands, strengthening seismic observations and geodetic studies.

In another important step, the tsunami modelling using mathematical tools helped researchers determine inundation limits. In particular, the disaster provided a stark reminder that nuclear power plants established along Indian coasts could be vulnerable to a hitherto underestimated risk. While the Kalpakkam nuclear power plant withstood the giant waves, it also shut down automatically after the rising water levels tripped the detectors. There was no release of radioactive material and the reactor was restarted six days later.

But the 2011 Tohoku earthquake reminded the world, and India, how quickly a nuclear disaster can happen in the absence of a failsafe. It was clear the radiation from the Fukushima facility had entered the human food chain. Researchers even found radioactive caesium in the breast milk of some women tested near Fukushima prefecture three months after the disaster. What if the waves in 2004 had been high enough to damage the reactors at Kalpakkam?

This question continues to resonate as the government has been pursuing large developmental projects in Great Car Nicobar, including the construction of an international transshipment terminal. Some experts have also argued that the last great earthquake that affected the region before 2004 was a millennium ago, so there is no imminent danger. But this question hinges on how much we still don't know. What if an unbroken patch of the subduction zone between Myanmar and India gives way? A still-unexamined portion of the crust between Great Nicobar and Car Nicobar suddenly breaking into a powerful earthquake and a tsunami can't be ruled out.

Experts and policymakers must also focus on other problem spots, like the Makran Coast in the northern Arabian Sea and the Myanmar coast adjoining the Northern Indian Ocean. Both of them have the potential to produce large

Excavations at Mahabalipuram, a port of the Pallava dynasty, unearthed evidence of a tsunami of the same vintage. Researchers also sifted through sedimentary deposits along coastal areas of the mainland to find evidence of other ancient tsunamis

tsunamis. The Makran Coast, cutting through Iran and Pakistan, could direct a tsunami's energy towards India's west coast, which also hosts nuclear reactors and the city of Mumbai.

## A major milestone

Science tells us that stress builds between tectonic plates until it reaches a critical strain, at which point the accumulated potential energy is released as an earthquake. Subduction zones like the Andaman Sumatra region are becoming significant as they provide clues to earthquake generation. The discovery of slow slips – tectonic faults that move many orders of magnitude slower and generally just a bit deeper – has also added a new dimension to this picture.

Of late, researchers have been studying seismic slips at plate boundaries to understand the processes that occur before and after major earthquakes. They have elucidated the occurrence of premonitory and post-seismic slip transients using laboratory experiments and numerical simulations. Some of these studies have implications for earthquake prediction: they indicate a creative process that initially involves stable, slow rupture growth within a confined zone on a fault just before unstable, high-speed rupture.

One paper published in 2015 (co-authored by one of the authors of this article) indicated a perceptible downward ground movement in South Andaman between 2003 and 2004, before the earthquake – a silent event with a moment magnitude of 6.3. This event could have been the precursor to the megathrust earthquake. Analyses of geodetic data on a wider set of global earthquakes published in *Science* also confirmed short-term precursory fault slips before large earthquakes.

After it happened, the 2004 Andaman-Sumatra earthquake became a major milestone in modern seismological research, providing scientists with a treasure trove of data to help glean new insights about earthquake generation and related hazards.

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# 'We want to be among the top five maritime nations by 2047'

Union Minister says large international cruise ships are coming to India because of the modern facilities and that the country's performance in cargo operations has been exemplary over the last 10 years; more than 780 lakh crore will be invested in sectors such as shipbuilding, green ports and modernisation of ports, he adds; part of the Lothal maritime museum will open by September 2025

## INTERVIEW

### Sarbananda Sonowal

Dinakar Peri  
Sreeparna Chakrabarty

The soon-to-be enacted twin Bills – the Coastal Shipping Bill and the Merchant Shipping Bill – will provide a huge impetus to coastal shipping, besides enhancing Indian ship ownership and promoting ease of doing business in the country, says Union Minister for Shipping and Ports Sarbananda Sonowal. He speaks on maritime vision 2047, tourism and other recent legislations. Excerpts:

#### Can you elaborate on the maritime vision 2047?

In the last 10 years, this sector has seen exemplary performance. According to

World Bank Logistics Performance Index reports, 2023, among 139 countries, India's position improved from 54 to 38 in the last 10 years due to various initiatives. If we talk of container dwell time [time spent by a cargo container at a port or terminal before it is moved out], it is about three days, which is much better than in many advanced countries. In turnaround time [time required for a ship to unload its cargo and depart], ours is 0.9 days, better than Canada, Australia, Germany and the U.S.

We have more than 176 maritime nations across the world. Among them, we want to become the world leader in different verticals like shipbuilding, ship repair and ship recycling. By 2030, we want to become one of the top 10 nations, and by 2047, we want to be among the top five. So this is the vision we have developed and whatever follow-up action is

needed to be undertaken, that has already started.

When the maritime Amrit Kail Vision 2047 was launched by Prime Minister Narendra Modi last year, it was decided to make an investment of more than 780 lakh crore in 25 years of our journey in different verticals like shipbuilding, green ports, green shipping, and modernisation of ports, etc. For example, in cargo handling capacity, the target is to reach 10,000 million metric tonnes by 2047. Today, we have a capacity to handle 1,600 million metric tonne.

To become a world leader, we have to develop world-class ecosystem with global standards in all the verticals, be it port management systems, cargo handling, shipbuilding, ship repair, ship recycling, also in all kinds of cruises – ocean cruise, coastal cruise, river cruise and inland waterways, coastal shipping and EXIM (ex-



By Sakshi

port-import) cargo. In all these verticals, India will have to showcase its credibility, quality, and capability.

#### Is the Ministry working on any tourism initiatives, specially, cruise tourism?

We have already developed six international cruise terminals. They are like airports, as in, whatever facilities are there in air-

ports, same facilities are being developed in these cruise terminals. Many international cruise liners like Cordelia and Costa Serena are coming to these terminals. These are some of the largest cruise liners in the world. These quality ships are coming to India because of the modern facilities. Not only infrastructure but also various other measures to promote cruise tourism, including incentives like tax exemp-

tions etc., are being provided.

We have also worked on lighthouse tourism. We have more than 200 lighthouses along our coastlines. Earlier, up to 2014, the tourist footfall was only 4.34 lakh, but now it has gone up to 16.19 lakh, which is a 273% growth in 10 years' time.

#### The Union Cabinet gave approval to the National Maritime Heritage Complex project in Lothal, Gujarat, in October. What is the progress and by when can it be completed?

When the entire project is completed, it would be the largest maritime museum in the world. It is expected to be completed by 2029. Its Phase-1A would be open to people from September 2025.

International collaborations with more than 20 countries have been proposed for development of

the complex. These collaborations will bring in joint maritime research activities, preservation of maritime heritage, exchange of information, artefacts, technical know-how, among other things.

This (NMHC) would be a centre for learning, study and research globally on maritime issues. Here you will discover precious information related to maritime activities across the world in various civilisations.

The project is anticipated to have a daily footfall of up to 25,000 and will create 22,000 jobs. At present, 65% physical progress for the phase 1A of the project has been achieved.

#### Can you talk of the recent laws that have been enacted?

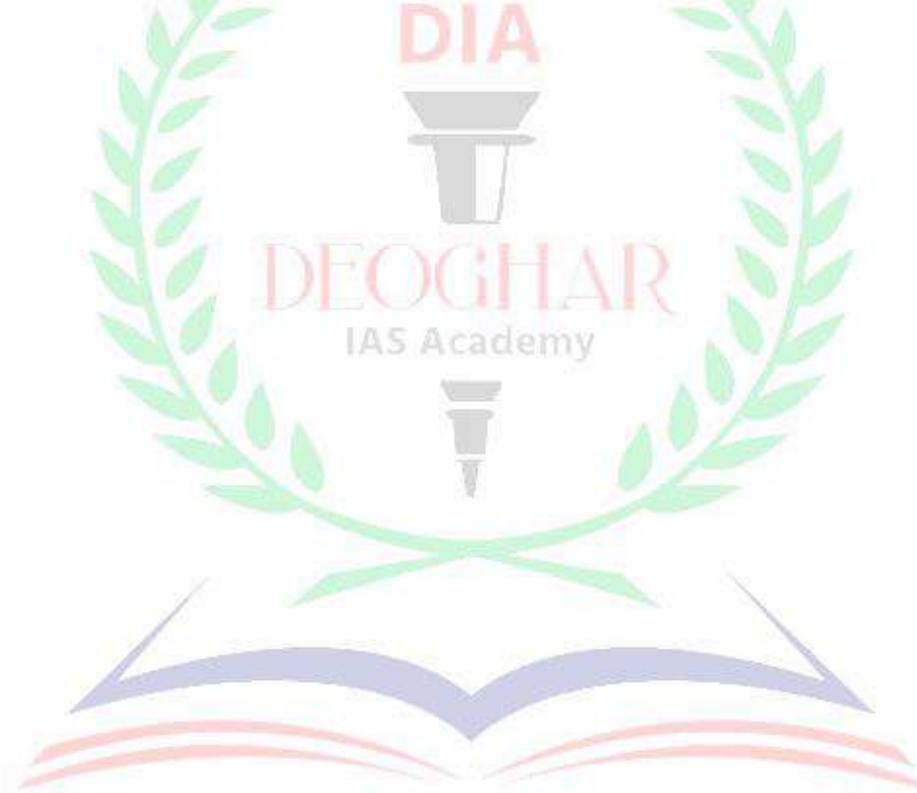
Legislative reforms are crucial for growth and development, through the rationalisation and

simplification of laws and the adoption of global best practices.

The revamped Major Port Authority Act, National Waterways Act, Inland Vessel Act, and Recycling of Ships Act have already accelerated growth and unlocked the hitherto untapped potential of the port, waterways, and ship recycling sectors.

Two new legislations, the Coastal Shipping Bill and the Merchant Shipping Bill, are soon to be enacted. These will provide a huge impetus to coastal shipping, integrating coastal and inland waterways, enhancing Indian ship ownership, promoting coastal security, combating marine pollution, securing seafarer's welfare along with regulating quality maritime training, boosting shipbuilding and ship recycling, and promoting ease of doing business in India.

(For full interview, go to bit.ly/sonowalint)



# Salman Rushdie's *The Satanic Verses* available in India

## Press Trust of India

NEW DELHI

*The Satanic Verses*, a controversial book by British-Indian novelist Salman Rushdie, is available for purchase in India, 36 years after the Rajiv Gandhi government banned the work.

Bahrison's Booksellers here has a "limited stock" of the book, whose content has been deemed to be blasphemous by Muslim organisations the world over. "It has been a few days since we got the book, and the response has been very good so far. The sale has been good," Rajni Malhotra, owner of the bookstore, said.

"This groundbreaking & provocative novel has captivated readers for decades with its imaginative storytelling and bold themes. It has also been at the centre of intense global controversy since its release, sparking debates on free expression, faith, & art," the bookseller said in a post on X.

In a post on the social media platform, Manasi Subramaniam, editor-in-chief, Penguin Random House India, said: "'Language is courage: the ability to conceive a thought, to speak it, and by doing so to make it true.' At long last. @SalmanRushdie's *The Satanic Verses* is allowed to be sold in India after a 36-year ban."

In November, the Delhi High Court closed the proceedings on a petition chal-



Salman Rushdie

lenging the ban. The order came after government authorities failed to submit the notification dated October 5, 1988, which banned the import of the book.

"In the light of the aforesaid circumstances, we have no other option except to presume that no such notification exists, and therefore, we cannot examine the validity thereof and dispose of the writ petition as infructuous," the court said.

The book ran into trouble shortly after its publication, eventually leading to Iranian leader Ruhollah Khomeini issuing a fatwa calling on Muslims to kill Mr. Rushdie and his publishers. Mr. Rushdie spent nearly 10 years in hiding in the U.K. and the U.S. In July 1991, the novelist's Japanese translator Hitoshi Igarashi was killed in his office. On August 12, 2022, Lebanese-American Hadi Matar stabbed Mr. Rushdie on stage at a lecture, leaving him blind in one eye.

The book has evoked a mixed response from readers, especially due to its price.

# Centre yet to formally scrap FMR with Myanmar

Tighter guidelines issued to regulate movement of people between the two countries; earlier, those living within 16 km of border were allowed to cross but the limit has now been set at 10 km

**Vijaita Singh**  
NEW DELHI

**M**onths after announcing that the Free Movement Regime (FMR) along the Myanmar border has been entirely suspended, the Union Home Ministry has brought in fresh protocol to regulate the movement of people living within 10 kilometres on either side of the largely unfenced international border.

A senior government official told *The Hindu* that the notification ending the FMR, which involves a bilateral agreement with Myanmar, is yet to be notified by the External Affairs Ministry.

Home Minister Amit Shah had announced on February 8 that the FMR had been scrapped to ensure internal security of the country and to maintain the demographic structure of the northeastern States. However, the new guidelines indicate that the regime has not been done away with but stricter regulations, such as reducing the range of free movement to 10 km from the earlier 16 km, have been introduced.

“There have been verbal announcements on ending FMR but formal orders are awaited,” the official said.

A February 16 order by the Manipur Governor regarding temporary suspension of the FMR along the



**Dividing line:** The 1,643-km-long border with Myanmar runs along Arunachal Pradesh, Nagaland, Manipur, and Mizoram. FILE PHOTO

Manipur border said, “MHA, Government Of India has recommended for scrapping the FMR to MEA, GoI and a formal order in this regard is awaited.”

The scrapping of the FMR was opposed by Nagaland and Mizoram. The Nagaland government, led by the Nationalist Democratic Progressive Party, an ally of the BJP, has passed a resolution in the Assembly against scrapping the FMR.

In Manipur, Chief Minister N. Biren Singh has attributed the ongoing ethnic violence, which has claimed more than 250 lives since May 2023, to the unregulated movement of people from across the border. On September 23, 2023, he urged the Home Ministry to cancel the FMR along the India-Myanmar border.

A senior government official said that pressure from political circles and civil society groups was one of the reasons for finalising

the “Instructions for regulation of cross-border movement of people of border area across the Indo-Myanmar Border” from 43 designated entry and exit points, instead of entirely scrapping the regime.

## Familial and ethnic ties

The FMR came into existence in 1968 as people on either side of the border have familial and ethnic ties. The territorial limit of free movement then was 40 km, which was reduced to 16 km in 2004, and additional regulations were enforced in 2016.

According to the new guidelines, a resident crossing the border from India to Myanmar will be given a “border pass” by the Assam Rifles for stay up to seven days in the neighbouring country. The Assam Rifles is the primary border guarding force along the 1,643-km-long border with Myanmar along the States of Aruna-

chal Pradesh (520 km), Nagaland (215 km), Manipur (398 km) and Mizoram (510 km).

## New rules

For entry into India from Myanmar, individuals will have to report at the designated border crossing points and fill a form.

The Assam Rifles will conduct the document inspection followed by a security and health check by the State police and health department officials, respectively.

The Assam Rifles will upload all the forms on the Indo-Myanmar Border portal, record biometrics, and issue a border pass with a photograph of the applicant and a QR code. The pass will have to be deposited on return at the same crossing point before completion of seven days.

The protocol stated that the police will do physical checks to verify the visit of Myanmar nationals as per the details provided in the border pass and anyone violating the conditions will face legal action.

Eight pilot entry and exit points will be made functional immediately on stabilisation of software and deployment of staff. Another 14 entry points will be activated on procurement and installation of biometric machines and the remaining 21 points after putting in place requisite infrastructure.

# ₹45,000-cr. Ken-Betwa link project launched

Modi lays the foundation stone for the river-linking project aimed at solving the water woes of the Bundelkhand region, spread across parts of the States of Uttar Pradesh and Madhya Pradesh; PM credits Dr. Ambedkar's vision for river valley projects, claims the Congress never gave architect of the Constitution credit for water conservation efforts

**Mehul Malpani**  
BHOPAL

Prime Minister Narendra Modi on Wednesday laid the foundation stone for the Ken-Betwa river-linking project in Madhya Pradesh's Khajuraho, aimed at solving the water woes of the Bundelkhand region, spread across parts of Uttar Pradesh and Madhya Pradesh. The project is estimated to cost around ₹45,000 crore.

Speaking at the event, Mr. Modi credited Dr. B.R. Ambedkar's vision for India's major river valley projects, and accused the Congress of not giving due recognition to the architect of the Constitution.

"The major river valley projects of India were based on the vision of Babasaheb Ambedkar. The Central Water Commission

exists today because of the efforts of Dr. Ambedkar but the Congress never gave him credit for his water-conservation efforts. No one was even allowed to know about it," he said, amid the ongoing controversy over Union Home Minister Amit Shah's remarks on Dr. Ambedkar. The Congress had staged protests seeking Mr. Shah's resignation over the issue.

"Who thought of a visionary water-conservation plan? The truth was suppressed. The true servant was forgotten so that credit could go to one person. I tell you that after the country got Independence, the credit for the farsightedness behind India's water management and construction of dams goes to Babasaheb Ambedkar," he said.

Mr. Modi said that the Congress governments of



Narendra Modi examines a project map during the event to lay the foundation stone for river linking project in Khajuraho. ANI

the past were "experts in making announcements" but did not have the "intention to implement the schemes".

#### Prosperity on cards

He claimed that the Ken-Betwa project will bring prosperity to the drought-prone Bundelkhand region. "The people of Bundelkhand struggled for ev-

ery drop of water but the previous governments did not find any permanent solution to the water crisis."

"Even after seven decades of Independence, disputes over river water between States continued but no concrete efforts were made to resolve them," Mr. Modi said.

"When Atal [Bihari Vajpayee]'s government was

#### SP hails project, Congress flags ecological impact

##### NEW DELHI

While the Congress on Wednesday described the Ken-Betwa river linking project as "another proof" of difference between Prime Minister Narendra Modi's "talk and walk" on environment, the SP sought to take credit for conceptualising it. » PAGE 5

Pradesh and various districts of Uttar Pradesh. The project is also aimed at generating more than 100 MW of hydropower and 27 MW of solar energy.

The Prime Minister also laid foundation for the Daudhan dam irrigation project, which is expected to address irrigation needs of 11 lakh hectares of land in the region.

Mr. Modi said that Madhya Pradesh has become the first State in the country with two river-linking projects under way at the moment. Recently, he had also launched the Parbati-Kalisindh-Chambal river-linking project that spreads between Rajasthan and Madhya Pradesh.

Apart from the Ken-Betwa project, the Prime Minister also virtually inaugurated a floating solar energy project in Madhya Pradesh's Omkareshwar,

the State's first solar power plant. He also laid the foundation stone for the construction of 1,153 Atal Gram Seva Sadans and released a commemorative stamp and coin in the honour of former Prime Minister Vajpayee, on the occasion of his birth centenary.

Madhya Pradesh Governor Mangubhai Patel, Chief Minister Mohan Yadav, Union Jai Shakti Minister C.R. Patil, Union Minister Shivraj Singh Chouhan, State BJP chief and Khajuraho MP V.D. Sharma and other leaders were present at the ceremony.

Speaking about concerns that the river-linking project may cause harm to the animals at the Panna Tiger Reserve, Mr. Modi said the animals at the reserve will be kept in mind while building the canal for the project.

