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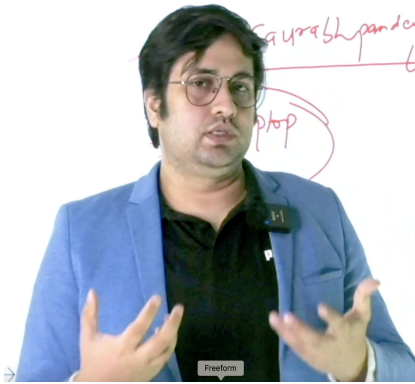

By saurabh Pandey

THE HINDU

Target Mains -2025/26 -

Q Cultural elasticity depends on ‘’frequency of development and disaster” phenomena in the region. Explain

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Q2. The term Willow has often been in news is associated with which among the following.

(The Hindu)

A) Satellite Constellation.

B) Asteroid

C) Quantum Chip

D) Solar cell variety

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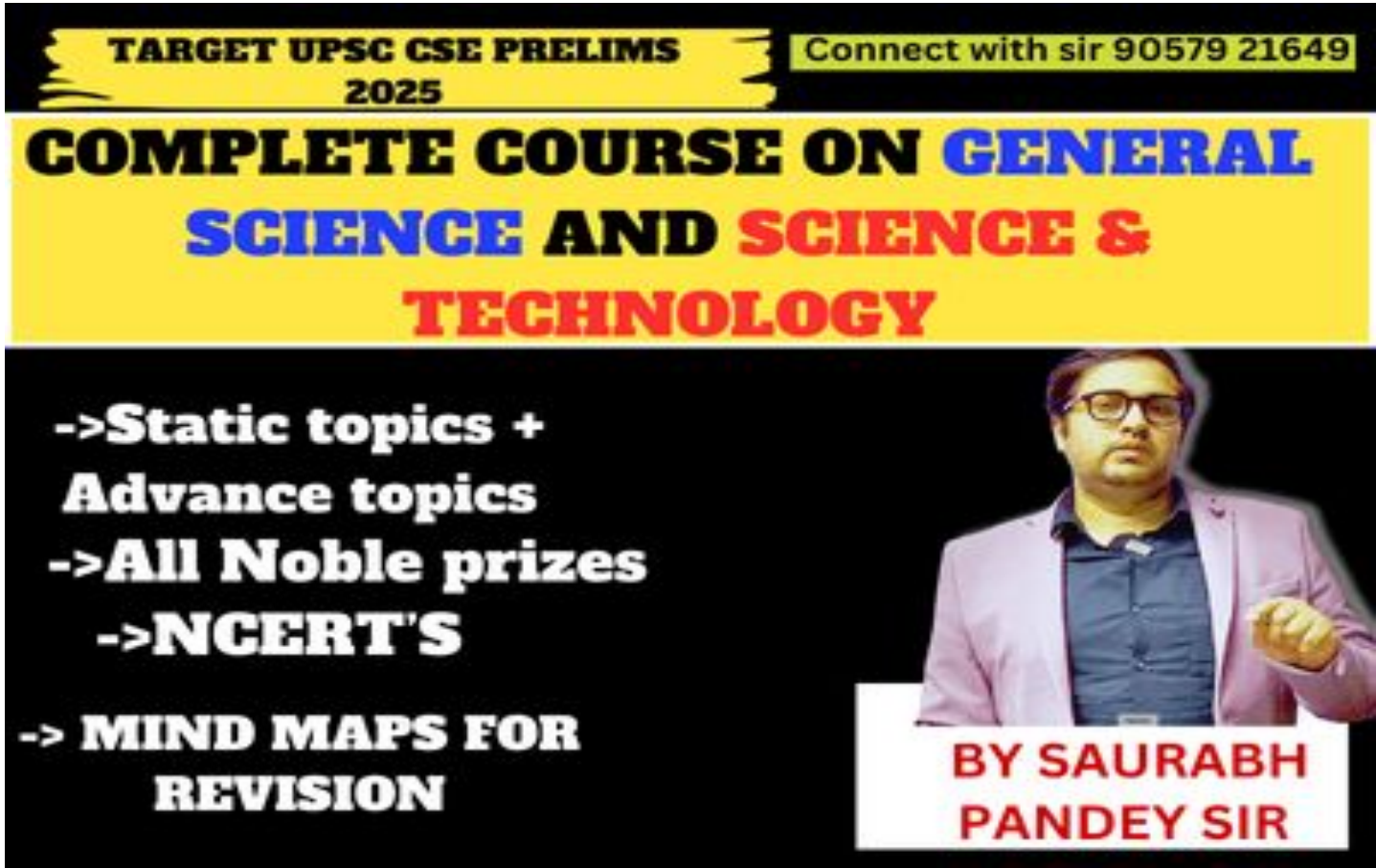

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₹45,000-cr. Ken-Betwa link project launched

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

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

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 every 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] *ji*'s government was formed, he came up with a permanent solution through the river-linking initiative and even started the work but it was discontinued after 2004. Today, Atal *ji*'s dream is about to be realised," he added.

The Ken-Betwa river linking project is expected to address drinking and irrigation water needs of at least 10 districts of Madhya 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 Jal Shakti Minister C.R. Patil, Union Minister and former Chief Miniser 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.

SP hails project, Congress flags ecological impact

NEW DELHI

While the Congress on Wednesdasy 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

Topic → The Ken-Betwa Link Project

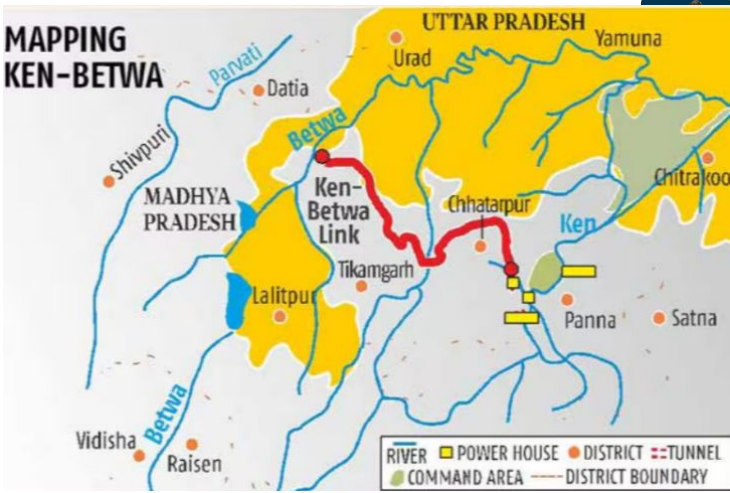
The Ken-Betwa Link Project stands as a monumental initiative aimed at resolving water scarcity issues in Madhya Pradesh. Launched by Prime Minister Narendra Modi, this ambitious project seeks to enhance irrigation facilities, boost agricultural productivity, and foster economic growth in the region. As climate challenges intensify, the project emerges as a beacon of hope for local farmers and communities.

Historical Context

River Linking in India: The concept of linking rivers to ensure equitable water distribution is not new in India. Previous attempts have often met with limited success due to environmental challenges and political hurdles.

Past Initiatives: Several river linking proposals were introduced over the years, but only a few have been implemented, leading to skepticism about new projects.

Key Features of the Ken-Betwa Link Project



Project Components:

Construction of the Daudhan Dam.

Canal systems for effective water distribution.

Irrigation Benefits:

Expected to irrigate around 1.5 million hectares of farmland.

Aims to increase agricultural yield and improve farmers' livelihoods.

Challenges Ahead

Environmental Concerns: Critics highlight potential ecological impacts, including habitat disruption and water quality issues.

Implementation Hurdles: The complexity of the project's execution raises questions about timely completion and effective resource allocation.

Conclusion

The Ken-Betwa Link Project promises to be a transformative force in Madhya Pradesh. While it carries immense potential for improving irrigation and agricultural productivity, it also faces challenges that need to be addressed thoughtfully. As the project progresses, its true impact on the region and its people will unfold.

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

Coastal devastation on Katchal Island, part of the Andaman and Nicobar Islands, in 2005. The island lost some 90% of it's population in the December 26, 2004, tragedy. APPOETTY IMAGES

December 26, 2024, 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 two 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 1883 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 390 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 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 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 transhipment 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 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.

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. DIGITALGLOBE

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

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 (coauthored 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 science with a treasure trove of data to help glean new insights about earthquake generation and related hazards.

(Kusala Rajendran is a former professor at the Centre for Earth Sciences, Indian Institute of Science, Bengaluru. CP Rajendran is an adjunct professor at the National Institute of Advanced Sciences, Bengaluru. They are authors of the book The Rumbling Earth – The Story of Indian Earthquakes. *kusalaraj@gmail.com, cprajendran@gmail.com)*

Topic → 20 Years After the Indian Ocean Tsunami: Lessons Learned and Futu Preparedness

The Catastrophic Event: A Timeline

The 2004 Indian Ocean tsunami stands as a harbinger of nature's ferocity, a seismic event that irrevocably altered the landscape of disaster management.

Magnitude & Location: On December 26, 2004, a colossal earthquake of 9.1 magnitude erupted off the Sumatran coast, generating the third-largest tsunami since 1900.

Geological Context: The earthquake emanated from a depth of 30 km in the Sunda Trench, where the Indo-Australian plate subducts beneath the Burma microplate.

Widespread Impact: The tsunami ravaged coastlines across 17 countries, including Indonesia, Thailand, and Sri Lanka, leading to an unparalleled loss of life and property.

Scientific Advancements Post-2004

In the aftermath of the tsunami, the scientific community rallied to enhance our understanding of tsunami dynamics and develop more effective monitoring systems.

Indian Tsunami Early Warning Centre (ITEWC): Established in 2007, ITEWC has become a cornerstone of tsunami monitoring in the Indian Ocean. Utilizing a network of seismological stations and bottom pressure recorders, it can transmit early warnings within minutes.

Tsunami Geology: The disaster prompted significant advancements in tsunami geology research, leading to the discovery of historical tsunami events through sediment analysis. This research has illuminated our understanding of past geological events that shaped the coastal landscape.

Lessons Learned for Future Preparedness

The 2004 tsunami underscored the importance of preparedness and risk management in the face of natural disasters.

Community Engagement: Involving local communities in preparedness programs has proven crucial. Educational initiatives and drills can significantly enhance response times and effectiveness during actual events.

Disaster Risk Reduction Strategies: Nations bordering the Indian Ocean have implemented comprehensive disaster risk reduction strategies, focusing on infrastructure resilience and community preparedness.

Current Risks and Global Vigilance

Despite advancements, the threat of tsunamis remains. Ongoing vigilance and research are paramount.

Identifying Vulnerable Regions: Areas such as the Makran Coast and the northern Arabian Sea are potential hotspots for future tsunamis.

International Cooperation: Enhanced collaboration among nations is essential for sharing data and resources to mitigate tsunami risks.

Bacteria, it appears, can breach the blood-brain barrier and thrive. CREDIT: 164

Scientists find bacteria living on fish brains

Arkatapa Basu

For decades, scientists have believed the human brain is a sterile fortress, protected from microbial invaders by the robust blood-brain barrier. But a new study, published in *Science Advances*, challenges this assumption by showing bacteria can't just make their way to the brain, they can thrive there.

Researchers from the University of New Mexico, led by biologist Irene Salinas, made this startling revelation when studying salmon and trout. Using DNA extraction and microscopic imaging, they identified living bacteria in the fishes' olfactory bulbs and other brain regions. The results showed the olfactory bulb, which is directly connected to the nasal cavity, harboured bacteria as did deeper-lying brain tissue.

"Our findings demonstrate that microorganisms ... redefine the boundaries between microbiota and the healthy vertebrate brain," the researchers wrote in their paper.

The presence of bacteria in fish brains raised several questions. The foremost was about how they managed to cross the blood-brain barrier. Salinas & co. discovered that many of these microbes possessed unique adaptations that helped them breach the barrier. Some produced molecules called polyamines that can open tight junctions in the barrier fluid; others were able to evade immune responses or outcompete their rivals, ensuring their survival in the brain's delicate environs.

The group also explored the origins of these brain-dwelling microbes. Some bacteria seemed to have colonised the brain much before the blood-brain barrier had evolved to its present form. Others likely travelled up from the gut or the bloodstream, continuously infiltrating the brain throughout the fishes' lives. The researchers said the presence of more than one pathway suggests the brain's

Many microbes had adaptations that helped breach the barrier. Some produced polyamines that can open tight junctions in the barrier fluid; others evaded immune responses, ensuring survival in the brain's delicate environs

microbial community is dynamic, shaped by both early colonisation and ongoing interaction with other bodily systems.

A particularly striking finding was the image of a bacterium caught mid-transit across the barrier, offering direct visual evidence. Some researchers have hypothesised that these microbes might be engulfed by immune cells while others have suggested they could play active roles in physiological processes – just like the human gut microbiome does in regulating digestion, immunity, and mood.

"Microorganisms shape the vertebrate brain via complex biological processes, the best characterised being the gut-brain axis," to quote from the paper. "This bidirectional communication involves molecular mediators released by microorganisms but not direct microbial colonisation of the brain. Our findings uncover remarkable associations between the salmonid brain and bacteria during healthy physiological states. Whether this is a hallmark of other teleosts or a universal symbiotic relationship found in all vertebrates remains to be investigated." Teleosts refers to a group of more than 26,000 fish species, making up the vast majority of all known fish.

Fish are very different from humans yet the study also opens the door to rethinking the brain's microbiome in vertebrates, including humans. If bacteria can thrive on fish brains, it's possible they may do so on human brains as well.

Topic -- Bacteria in brain

For decades, scientists have held the view that the human brain is a sterile fortress, impervious to microbial intrusions thanks to the formidable blood-brain barrier. However, a groundbreaking study published in *Science Advances* has turned this assumption on its head, revealing that not only can bacteria infiltrate the brain, but they can also thrive there. This revelation stems from research conducted by a team at the University of New Mexico, led by biologist Irene Salinas.

Key Highlights

Study Findings: Identification of living bacteria in the olfactory bulbs and deeper brain tissues of salmon and trout.

Significance: Challenges the long-standing belief about brain sterility and opens new avenues for research on brain health and microbiomes.

Study Findings: Bacteria in Fish Brains

The research team employed DNA extraction and microscopic imaging to uncover the presence of bacteria in various brain regions of salmon and trout. The olfactory bulb, which is directly connected to the nasal cavity, was found to harbor bacteria, along with deeper-lying brain tissues.

Bacteria Identification: Living bacteria were discovered in the olfactory bulbs, indicating a complex relationship between the brain and microorganisms.

Quotes from Researchers: "Our findings demonstrate that microorganisms redefine the boundaries between microbiota and the healthy vertebrate brain."

Mechanisms of Bacterial Survival

The study reveals that bacteria have developed unique adaptations enabling them to cross the blood-brain barrier. Some bacteria produce molecules called polyamines that help to open tight junctions in the barrier, while others evade immune responses, ensuring their survival in the delicate brain environment.

Key Mechanisms:

Production of polyamines to breach the barrier.

Ability to outcompete rival microbes and evade immune detection.

Implications for Human Health

The implications of this study extend beyond fish, raising significant questions about the potential existence of a human brain microbiome. If bacteria can thrive in fish brains, it opens the door to the possibility that similar dynamics exist in humans.

Potential Health Implications:

Influence on mood, immunity, and overall brain function, similar to how the gut microbiome regulates various physiological processes.

Possible links to neurological diseases and conditions.

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 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.

Pushpendra 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

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.

Topic - Tsunami and further steps

The 2004 tsunami was not just a natural disaster; it was a global catastrophe that affected numerous countries, leaving behind a trail of destruction and lessons that we must not forget.

As we reflect on this tragic event, it’s crucial to consider the six critical lessons that emerged from the aftermath.

These lessons not only highlight the vulnerabilities exposed by the tsunami but also emphasize the importance of proactive measures to mitigate future disasters

| Lesson 1: The Importance of Mangroves

Natural Protection Against Waves

One of the most significant lessons learned from the tsunami is the vital role that mangroves play in protecting coastal areas. These natural barriers serve as buffers against powerful waves, absorbing their energy and reducing the impact on human settlements. Unfortunately, the destruction of mangroves in countries like India, primarily for shrimp farming and tourism, has disrupted this natural ecosystem. Ironically, the construction of artificial barriers, such as brick and mortar walls, can sometimes increase vulnerability to wave damage rather than provide protection. |

Lesson 2: Keeping Common Resources Public

The Impact of Privatisation in Thailand

The tsunami also taught us about the importance of keeping common resources, like beaches, in the public domain. In Thailand, the privatisation of coastlines during the 1980s and 1990s led to the development of hotels and leisure activities, displacing local communities. This shift not only altered the social fabric but also resulted in significant changes in labor dynamics, including the rise of the sex industry. The lesson here is clear: when public resources are privatized, the local population often bears the brunt of the consequences. |

| Lesson 3: Winners and Losers in the Market

Economic Disruption Post-Tsunami

The tsunami created a stark divide between winners and losers in the market. While rents and prices for goods and services skyrocketed, benefiting asset owners and service providers, many local communities faced economic hardship.

The disruption of local markets led to a reliance on externally sourced goods, undermining traditional livelihoods.

The push for mechanized fishing displaced artisanal practices, leading to overfishing and environmental degradation. Addressing these economic shifts is crucial for rebuilding resilient communities. |

Lesson 4: Worsening Inequalities

Access to Relief and Rehabilitation

The tsunami highlighted the existing social inequalities that often worsen during disasters. In countries like India, relief efforts can inadvertently reinforce discrimination and marginalization.

Vulnerable groups, including laborers, ethnic minorities, and women, often find their needs overlooked in the distribution of aid.

For instance, undocumented migrants in Thailand faced significant barriers to accessing medical care, while Tamil minorities in Sri Lanka received less assistance despite greater devastation. This underscores the need for equitable relief efforts that consider the diverse needs of affected populations.

| Lesson 5: Gender-Insensitive Policies

The Vulnerability of Women

Gender insensitivity in relief and rehabilitation policies often exacerbates the vulnerability of women. In fishing communities, women play crucial roles in processing and marketing fish, yet they rarely own property or assets. During the tsunami recovery, many women found their livelihood needs overlooked, as relief packages were distributed based on lists that often excluded them. This highlights the importance of addressing social divisions and ensuring that women have equal access to relief measures.

| Lesson 6: Engagement with Local Structures

Respecting Community-Based Institutions

Finally, the tsunami revealed the importance of engaging with local structures and respecting community-based institutions. In coastal communities, democratic practices often rely on active debate rather than formal elections. However, outside agencies frequently impose their own notions of democracy, undermining local capacities and resilience. A long-term engagement with local structures is essential for addressing issues like gender insensitivity and fostering community resilience.

| Conclusion

The 2004 tsunami was a wake-up call for the global community. The lessons learned from this disaster are not just historical footnotes; they are essential guidelines for building more resilient societies. By prioritizing natural protections, ensuring equitable access to resources, and respecting local institutions, we can better prepare for future disasters and mitigate their impacts. |

The lapses in the disaster management Bill

Amita Singh

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

The 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 Sundarbans, 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 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 countires, to ignore regional collaboration is a serious lapse.

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

Topic → The Disaster Management (Amendment) Bill, 2024: A Cause for Concern

Introduction

The Disaster Management (Amendment) Bill, 2024, has stirred up quite a bit of controversy. Instead of addressing the gaps in the Disaster Management Act (DMA) of 2005, it seems to have taken a step back, removing essential elements like participatory governance, accountability, and efficiency. So, what's really going on here? Let's dive into the details.

The Gaps in the Disaster Management Act (DMA)

Semantic Issues

Top-Down Terminology

One of the first red flags in the Bill is its use of guarded terminology. Words like "monitor" and "guidelines" create a top-down approach that feels more bureaucratic than collaborative. Wouldn't it be better to use terms like "supervision" and "direction"? This could foster a sense of trust and partnership with local communities and governments.

Definitions Without Substance

While the Bill does define terms like "hazard," "resilience," and "vulnerability," these definitions feel hollow. They lack the acknowledgment of the vital roles that local communities, panchayats, and NGOs play in disaster management. Remember Cyclone Aila in 2009? Villagers were rescuing people long before the National Disaster Response Force could arrive. This shows the importance of local knowledge and capacity.

The Role of Local Communities

First Responders in Action

Local communities are often the first responders during disasters. They have the knowledge and experience to act quickly and effectively. Ignoring their contributions in the Bill is a significant oversight. It’s like trying to build a house without a solid foundation—good luck with that!

Intersectional Discrimination

Ignoring Vulnerability

The Bill also falls short in addressing intersectional discrimination. It’s crucial to recognize that women, the disabled, lower castes, and LGBTQIA communities face unique challenges during disasters. By ignoring these layers of vulnerability, the Bill weakens its claim to be holistic and inclusive.

Accountability and Performance Evaluation

The Omission of Key Sections

Another glaring issue is the lack of accountability measures. The Bill omits critical sections from the DMA that ensured minimum standards of relief for disaster victims. What happened to provisions for widows, orphans, and the homeless? Without these, the Bill leaves a significant gap in support for those who need it most.

Law and Order Exclusion

The Role of Police in Disaster Management

Interestingly, the Bill excludes "law and order" from its scope. Yet, it still includes State Director Generals of Police in the State Executive Committees. This contradiction raises questions about the Bill's coherence and effectiveness in managing disasters.

Speciesism in Disaster Management

The Neglect of Animal Welfare

Let’s not forget about our furry friends. The Bill fails to mention the thousands of animals that perish during disasters. The District Disaster Management Authorities seem to have little responsibility in implementing animal welfare rules. This oversight is not just a gap; it’s a moral failing.

Urban Disaster Management Authority (UDMA)

The Need for UDMA

The introduction of an Urban Disaster Management Authority (UDMA) raises eyebrows. What's the need for this additional authority? Municipal Corporations already control land and property taxation. How can they improve disaster management when they often contribute to urban flooding through poor planning?

Regional Collaboration

The Importance of International Cooperation

In a world grappling with zoonotic diseases and other global challenges, regional collaboration is more important than ever. The Bill could have mentioned regional groupings like SAARC and BIMSTEC to enhance disaster response. Ignoring these opportunities for international cooperation is a serious oversight.

Conclusion

In summary, the Disaster Management (Amendment) Bill, 2024, raises serious concerns. Instead of filling the gaps in the DMA, it seems to have created new ones. By sidelining local communities, ignoring intersectional vulnerabilities, and lacking accountability, the Bill risks undermining effective disaster management. It’s time for a rethink—because when it comes to disaster management, we can’t afford to get it wrong.

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:

On 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 such agreements with 83 countries.

GETTY IMAGES

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.f 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 nonzero 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.

Krishna Ravi Srinivas is adjunct professor of law, NALSAR University of Law, Hyderabad, and consultant, RIS New Delhi

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.

Topic → U.S. and China renew S&T Agreement

The world of science and technology is ever-evolving, and the relationship between two of its major players, the United States and China, has been a focal point of global attention. On December 13, 2023, these two nations agreed to extend their Agreement on Cooperation in Science and Technology for another five years, effective from August 27, 2024. This decision has been met with optimism, as it signifies a commitment to collaboration in a field that is crucial for both countries' futures.

Historical Context of the Agreement

The First Signing in 1979

The roots of this agreement trace back to January 31, 1979, when Chinese leader Deng Xiaoping and U.S. President Jimmy Carter signed the original pact. This was a time when both nations were just beginning to establish diplomatic relations, and they recognized the potential benefits of cooperating on agricultural research and technology.

Evolution Over the Years

Since its inception, the agreement has been renewed every five years, expanding its scope to include various fields, from agriculture to nuclear fusion. Governed by the U.S.-PRC Joint Commission on Scientific and Technological Cooperation, the agreement has seen the appointment of co-chairs and executive agents from both countries, along with numerous sub-agreements. |

Importance of Bilateral Science and Technology Agreements

Facilitating Cooperation

Bilateral agreements like this one are essential for promoting cooperation in science and technology. They often serve as frameworks for more specific agreements and pacts, paving the way for collaboration that extends beyond state institutions.

The Role of Joint Research

These agreements facilitate joint research initiatives, allowing scientists and researchers from both countries to work together on projects that can lead to groundbreaking discoveries.

Mobility for Students and Scientists

Additionally, they encourage the mobility of students and scientists, fostering an environment where knowledge and expertise can flow freely between nations. |

Key Features of the Renewed Agreement

Addressing Conflicts

The renewed agreement comes at a time when tensions between the U.S. and China have been rising, particularly regarding technology exports and concerns about China's growing prowess in science and technology.

Enhanced Researcher Safety

To address these issues, the amended agreement includes measures to enhance researcher safety and ensure data reciprocity.

Data Reciprocity Measures

The collaboration will now focus on intergovernmental levels, basic research, and previously identified themes of mutual benefit, while excluding cooperation in critical and emerging technologies. |

| Concerns and Challenges

Intellectual Property Rights Issues

Despite the positive aspects, there are concerns regarding intellectual property rights and China's ability to leverage the research ecosystem. Reports have indicated that China has commercialized U.S. research without providing benefits to American counterparts.

U.S. Response Options

Before renewing the agreement, the U.S. faced three options: renew as usual, rescind, or renew with new restrictions. Ultimately, the U.S. chose the latter, indicating a desire to maintain some level of cooperation while addressing concerns. |

Gains for the U.S.

China's Rise in Global Science

Since the 1970s, China has transformed from a junior partner to a formidable competitor in global science. Its R&D spending skyrocketed from $375 million in 1979 to $442 billion in 2021, making it a significant player in the field.

The Value of Cooperation

The U.S. has also benefited from this agreement, as evidenced by the increasing number of co-authored papers and the growing presence of Chinese students in American universities. This cooperation has proven valuable for both nations, allowing them to leverage each other's strengths. |

| Conclusion

The renewed U.S.-China Agreement on Cooperation in Science and Technology is a testament to the importance of collaboration in an increasingly interconnected world. While challenges remain, the agreement provides a framework for addressing concerns and fostering innovation. As both countries navigate their complex relationship, the focus on science and technology cooperation will be crucial for their mutual growth and global leadership. |

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.

Topic → Understanding the Online Safety Amendment (Social Media Minimum Age) Bill

The Online Safety Amendment (Social Media Minimum Age) Bill, 2024, marks a pivotal shift in Australia's approach to online safety. This legislation mandates that certain social media platforms must take reasonable steps to prevent Australian children under the age of 16 from creating accounts. The primary goal? To mitigate the risks and potential harms associated with social media use among young users.

->The bill inserts a new part in the existing Online Safety Act of 2021, aimed at reducing harm to age-restricted users.
->It specifically targets age-restricted social media platforms (ARSMP), encompassing popular services such as TikTok, Facebook, and Instagram.
-> As articulated by the Australian Minister of Communication, the legislation aims to safeguard children from the potential dangers of online interactions.

Implementation of Age Restrictions

The enforcement of this law will be a significant challenge for social media providers.

Social media platforms must implement robust age verification mechanisms to ensure compliance.
The bill outlines penalties for failure to meet these obligations, with fines reaching up to $49.5 million for non-compliance.
However, the term "reasonable steps" remains ambiguous, leading to uncertainties about implementation.

Key Points of Enforcement:

Guidelines from the eSafety Commissioner: The Commissioner will draft guidelines to clarify what constitutes reasonable steps for preventing underage accounts.
Age Verification Requirement: All users on ARSMPs will need to verify their age.

Consultation with Stakeholders: The government will engage with various stakeholders to determine acceptable age assurance technologies.

Privacy Concerns and Age Assurance Technologies

While the intent behind the bill is to protect children, there are significant privacy concerns tied to the implementation of age assurance technologies.

Data Collection Risks: These technologies may gather extensive personal information, raising alarms over data privacy and security.
Legal Obligations: Entities holding personal information will face new privacy obligations, including the destruction of data after its intended use.
Potential Penalties: Violations of privacy regulations may trigger penalties under the Privacy Act of 1988.

Considerations Regarding Privacy:

The need for a delicate balance between user safety and privacy rights is paramount.

The government plans to legislate a Digital Duty of Care, holding platforms accountable for user safety and online harms.

Debate: Is Social Media Harmful to Children?

The question of whether social media is harmful to children remains contentious. Emerging research highlights both the benefits and pitfalls of digital interaction.

Some experts argue that a blanket ban may not effectively address the nuanced risks associated with social media use.

Critics of the legislation describe it as "rushed" and "reckless," advocating for more tailored solutions rather than sweeping restrictions.

Key Arguments Against the Ban:

Impact on Mental Health: Studies indicate that social media can adversely affect children's mental health, yet complete exclusion may not be the remedy.

Call for Evidence-Based Approaches: Advocates suggest that more nuanced, evidence-based strategies should guide legislative efforts to protect children online.

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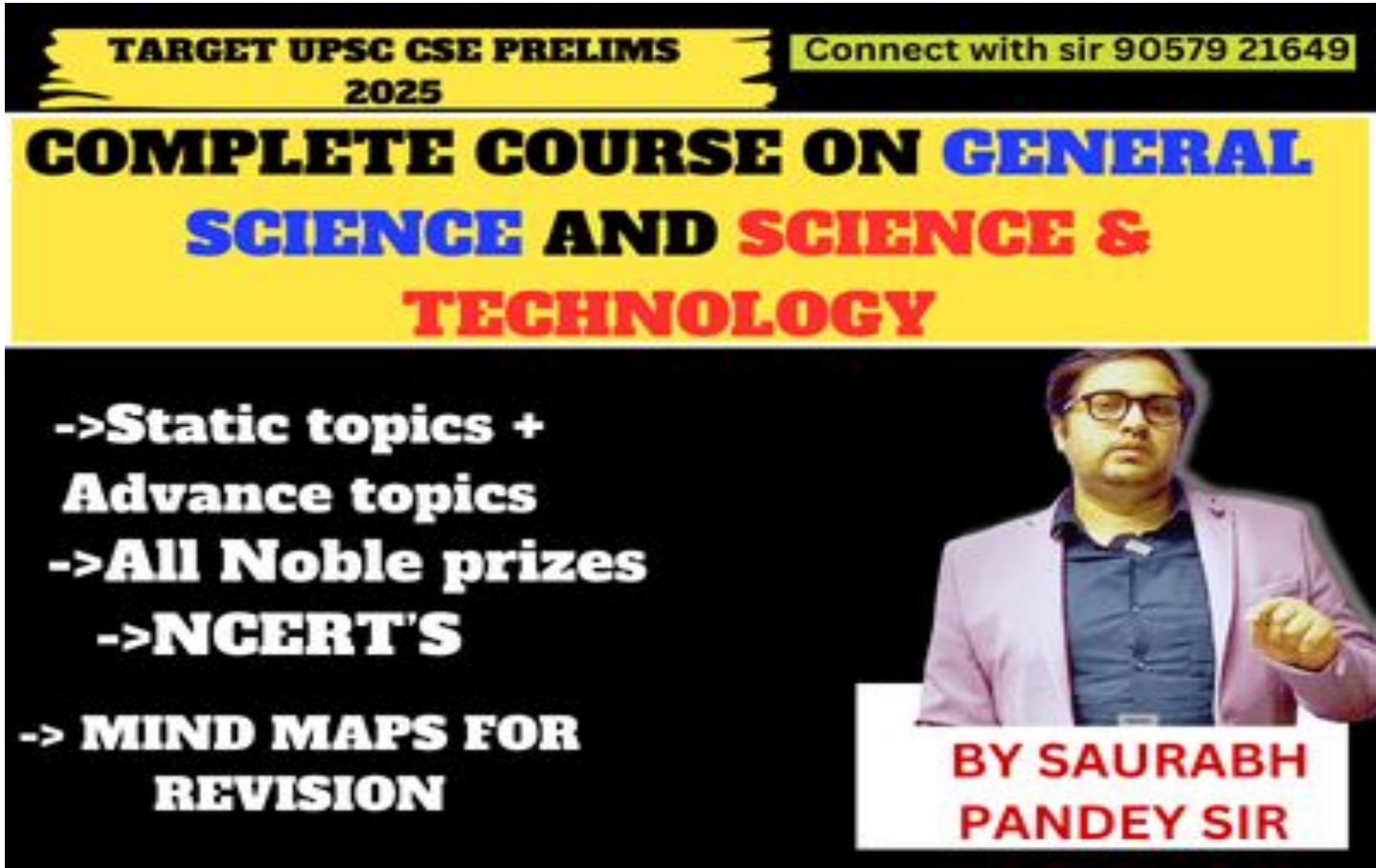

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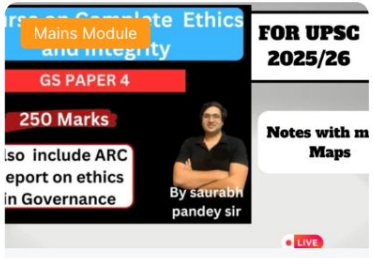

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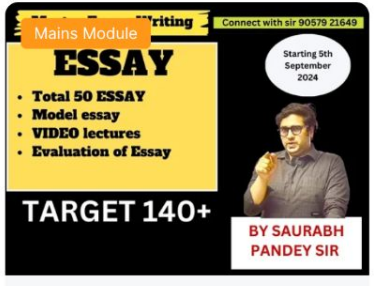

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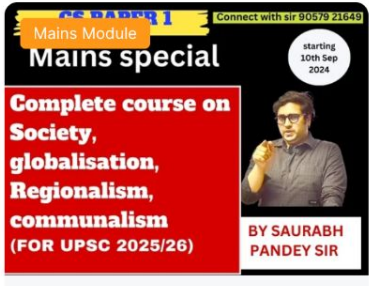

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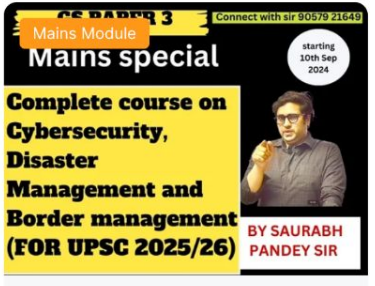

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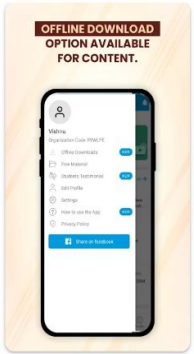

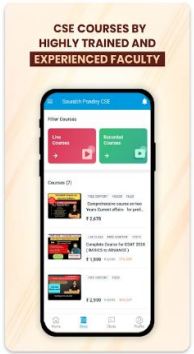

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Q. The term Willow has often been in news is associated with which among the following.

(The Hindu)

A) Satellite Constellation.

B) Asteroid

C) Quantum Chip

D) Solar cell variety

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Q Cultural elasticity depends on ‘’frequency of development and disaster” phenomena in the region. Explain

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