Balasore railway tragedy toll rises to 288

All types of investigations have been ordered, whoever is found guilty will be punished, says Modi after visiting the accident site; Odisha observes Saturday as a day of mourning for the lives lost even as the massive disaster response team worked well into the day to retrieve bodies from the wreckage; 1,091 injured persons get treatment

Balasore train tragedy toll rises to 288

Mr. Vaishnaw retorted immediately by saying that the rescue operation was over and the death toll stood at 238.

Rescue effort

The sound of the collision was so loud that it drew people from villages nearby. Local residents turned into volunteers and broke down the windows to rescue the victims.

"Local youth did not wait for government assistance to come. They contributed from their pockets and sent injured ones to hospitals. Even some autorickshaw drivers shifted injured ones free of cost," Srikant Mohanty, a local resident, said.

Seven units of the National Disaster Response Force, five units of the Odisha Disaster Rapid Action Force and 24 fire services units were immediately pressed into service. However, the magnitude of the accident was so high that disaster response personnel aided by local people took the whole of Friday night and Saturday morning to pull out the bodies from the wreckage.

In what proved to be a daunting task, more than 100 medical teams with paramedical staff and 200 ambulances were mobilised to the accident site. Odisha observed Saturday as a day of mourning for the lives lost in the accident. As many as 33 trains were cancelled and 36 were diverted through other routes.

Tamil Nadu's Kishore, Kamali crowned champions

Tamil Nadu's Kishore Kumar and Kamali Moorthy were crowned the men's and women's champion of the fourth edition of the Indian Open of Surfing at the Mantra Surf Club, Mangaluru, on Saturday. Kishore won the u-16 boys' groms and the men's open categories, while Kamali won the u-16 girls' groms and the women's open categories. Kishore thanked his coaches at Surf Turf and added: "I'm very happy to win two titles in a day and these wins will surely uplift my confidence to perform well in the upcoming championships and events." The 14-year-old Kamali said, "I'm very happy, and grateful to the SFI and the judges for allowing me to participate in both the female categories; winning both titles gives me immense pleasure. The winning moments will be cherished for a long time."

T.N. generates 2,687 MW of wind energy in past 2 days

Despite being a leading producer, the State only saw 200 MW of additional capacity come up during 2022-23; industries reluctant to invest due to lack of 'banking' facility, says expert

M. Soundariya Preetha
COIMBATORE

Wind energy generation in Tamil Nadu has picked up over the past two days, with 2,687 MW generated on Friday. K. Kasthurirangaian, chairman of the Indian Wind Power Association, on Saturday told *The Hindu* that 62 million units of the electricity consumed on Thursday came from wind energy, and on Friday, 60 million units came from wind energy. "There were two full days of evacuation [of wind energy] in March. But wind energy generation stopped after that. Since June 1, however, energy is being generated

Wind energy comprised 62 million units of the total electricity consumed in the State on Thursday, and on Friday, it made up 60 million units. FILE PHOTO

and evacuated throughout the day."

He also said, "Last windy season, there were days when 105 million units of electricity consumption came from windmills. This year too, we expect wind energy consumption to peak to 100 million units or more a day." The windy season starts in May and

goes on till October.
With 8,744 MW of installed capacity, Tamil Nadu is a leading wind energy producer. However, during 2022-23, only 200 MW of additional capacity came in, he said.

Energy consultant A.D. Thirumoorthy said most of the wind pockets in the State are saturated with windmills. Further, without a "banking" facility, industries are reluctant to invest in wind energy. The investments are for captive use or third-party sale of the electricity generated. The excess power generated will not be of use without a "banking" facility, he said. And so, industries prefer to invest in solar energy.

Aadhaar-based system can solve the delay in wages of MGNREGS workers: govt.

The Hindu Bureau
NEW DELHI

With reports on wage payments to the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) workers failing due to frequent changes in the bank account numbers of the beneficiaries, the Union government has urged State governments to ensure that the Aadhaar-based payment system (ABPS) is enabled.

In a statement here, the Union Rural Development Ministry said that ABPS was the best route to avoid such rejections.

"Once Aadhaar is updated in the scheme database, beneficiaries need not update account numbers due to change in location or change in bank," the Ministry said.

The Ministry also expressed hope that before the June 30 deadline set by it, making it mandatory for all beneficiaries to have ABPS, 88%-90% of active MGNREGS workers would be covered.

The Ministry has also asserted that workers would not be refused work if they did not have an Aadhaar number. Thus far, about 74.9% active workers have been marked eligible for the payment system, according to data on the Ministry's website.

'Don't deny work'
The Rural Development Ministry urged States to organise camps and follow-up with beneficiaries to achieve 100% coverage under the ABPS.

It has also clarified that beneficiaries should be requested to provide their Aadhaar number, but should not be refused work if they do not have an Aadhar number.

Under the MGNREGS, the ABPS has been in use since 2017, the Ministry said, adding that after almost universal availability of Aadhaar number to every adult, the government has decided to extend ABPS to beneficiaries under the employment scheme.

Out of the total of 14.28 crore active beneficiaries, Aadhaar has been seeded for 13.75 crore beneficiaries. Against these seeded beneficiaries, a total of 12.17 crore Aadhaar numbers had been authenticated, and 77.81% beneficiaries were now already eligible for the ABPS, the Ministry said.

In May, about 88% of wage payments had been made through the ABPS, the Ministry added.

Target set: The Ministry has urged States to follow-up with beneficiaries to achieve 100% coverage under the ABPS. FILE PHOTO

Are safeguards needed to make AI systems safe?

What are the promises and pitfalls of advances in artificial intelligence? Why are experts seeking regulation to govern specific AI use cases? Can tools like chatbots influence people's opinion more than social media? Do Big Tech firms consider AI safety a priority?

John Xavier

The story so far:

On May 30, the Centre for AI Safety (CAIS) issued a terse statement aimed at opening the discussion around possible existential risks arising out of artificial intelligence (AI). "Mitigating the risk of extinction from AI should be a global priority alongside other societal-scale risks such as pandemics and nuclear war," the one-sentence statement said. The statement was backed by Sam Altman, CEO of OpenAI, DeepMind CEO Demis Hassabis, Anthropic CEO Dario Amodei, Turing Award winners Geoffery Hinton and Yoshua Bengio, and some professors from MIT, Stanford and Berkeley.

What is the context of the statement?

The CAIS's statement, endorsed by high-profile tech leaders, comes just two weeks after Mr. Altman, along with IBM's Chief Privacy Office Christina Montgomery and AI scientist Gary Marcus, testified before the U.S. Senate committee on the promises and pitfalls of advances in AI. During the hearing, OpenAI's co-founder urged lawmakers to intervene and place safeguards to ensure the safety of AI systems. He specifically suggested the

Experts say artificial intelligence systems can behave in unpredictable and dangerous ways

committee look into a combination of software licensing, and testing requirements for AI models above a certain threshold.

Ms. Montgomery urged lawmakers to adopt a "precision regulation approach." This meant establishing rules to govern specific AI use cases as opposed to regulating overall AI development. In that context, the strongest regulation would be needed where AI posed the greatest risk to people and society. She also pointed out that AI systems must be transparent so that people know they are interacting with AI when they use that technology.

Prof. Marcus pointed out that tools like chatbots could surreptitiously influence people's opinion far greater than social media. And companies that choose what data goes into their large language models (LLM) could shape societies in subtle and powerful ways. "We have built machines that are like bulls in a China shop – powerful, reckless, and difficult to control," he told the committee of lawmakers. A few weeks before the Senate hearing, Geoffrey Hinton, known as the 'godfather' of AI, quit Google, saying he regretted his life's work on developing AI systems. Mr. Hinton pioneered research on deep learning and neural networks which paved the way for the current crop of AI chatbots.

What is CAIS and how is it funded?

The CAIS is a not-for-profit based out of San Francisco, California. The organisation is largely funded by Facebook co-founder Dustin Moskovitz's Open Philanthropy, a grant-making foundation. The organisation makes grants based on the principles of effective altruism – a philosophy that urges followers to channel their wealth to causes that are often backed by data. Open Philanthropy, according to its records, has recommended a grant of $5.16 million to CAIS for general support as the latter's work comes under one of its focus areas – potential risks from advances in AI.

What cause does CAIS support and how?

The CAIS aims to mitigate existential risks arising from AI systems that could affect society at large. The organisation does research and publishes papers on AI safety, and also provides funding and technical infrastructure to other researchers to run and train their LLMs in the field of AI safety. Through its work, CAIS seeks to develop AI benchmarks and examine AI safety from a multi-disciplinary perspective.

The Nvidia A100 GPU it offers to external researchers as part of its computer cluster programme is one of the most powerful processors used for training LLMs and deep learning algorithms. The U.S. government had barred Nvidia from exporting the A100 GPU, and its successor, the H100, to China in September. Following the ban, the graphic chip maker tweaked its chips exported to China.

Why is safety important in Machine Learning (ML) and AI development?

ML and AI systems are being deployed in high-stakes environments. And their decision-making capabilities are becoming a cause for concern. In one simulation, an AI-enabled military drone was programmed to identify an enemy's surface-to-air missiles (SAM). Once it spots the SAM site, a human agent was supposed to sign off on the strike. But the AI decided to blow up the site instead of listening to the human command. Narrating this incident at a summit hosted by the Royal Aeronautical Society, Colonel Tucker Hamilton, head of the U.S. Air Force's AI Test and Operations, warned that AI can behave in unpredictable and dangerous ways.

Not just in military, but AI and ML are used in diverse industries. Medical science is a major area where AI is used to train large datasets to diagnose health conditions. Car manufacturers deploy advanced driver-assistance systems (ADAS) to give drivers automated driving experiences. Safely deploying AI systems in such industries is vital.

How do we address the safety problem in AI?

Experts suggest audit of AI systems. However, that cannot be done unless a commonly accepted standard or threshold is formulated for an independent external audit team to review.

Also, Big Tech firms' handling of their internal responsible AI departments in the last few years show the companies' antipathy towards people questioning their AI systems. Google fired some of its top ethical AI researchers for raising issues of bias in its algorithm. Separately, in March, Microsoft laid off its entire ethics and society team within its AI division as part of its recent retrenchment.

GETTY IMAGES

Increased rainfall alone will not help groundwater recovery

The projected increase in groundwater use for irrigation can cancel the benefits of increased rainfall from warming climate; consecutive years of drought, too, can adversely affect groundwater storage as recharge will be less

R. Prasad

Rapid depletion of groundwater in north India has become a norm during the last few decades. Between 2002 and 2022, about 95% of India's groundwater depletion occurred in north India. Groundwater use and summer monsoon rainfall variability are the two main drivers of groundwater storage.

Climate change can throw new challenges for the sustainability of groundwater due to increased groundwater pumping to meet irrigation demands for crops. Also, a warming climate will increase the frequency of hydroclimate extremes – floods and droughts. A less discussed aspect is the role of increased evapotranspiration due to warming climate, which will limit water availability for groundwater recovery. But its role will be less as increased groundwater use for irrigation will be the main driver of groundwater usage.

Warming climate will also increase the amount of summer monsoon rainfall that north India will receive, and the enhanced precipitation could help recovery rates of groundwater. But so far it has been unclear if stronger summer monsoon rainfall alone in the future will be sufficient to compensate for increased water demand for irrigation and loss due to evapotranspiration.

A two-member team from IIT Gandhinagar used observational groundwater well data, and satellite observations from the Gravity Recovery and Climate Experiment (GRACE) and hydrological model simulations under future emission scenarios to understand the variability of groundwater storage under the warming climate. The team found that the projected increase in summer monsoon due to climate change notwithstanding, recovery of the depleted groundwater in north India will be insufficient if there is continued use of groundwater at current levels for irrigation.

"Climate warming and unsustainable groundwater extraction are likely to amplify the challenges related to groundwater sustainability," they write in a study published in the journal One Earth. "The dominance of groundwater use will continue under the warming climate, which will hamper the recovery of the lost groundwater in north India."

Team's findings

The team led by Dr. Vimal Mishra from the Department of Civil Engineering at IIT Gandhinagar found that excessive pumping from non-renewable groundwater storage will aggravate groundwater loss. While most of the current observation wells are in the shallow aquifer, pumping of groundwater for irrigation in the Indo-Gangetic Plain is predominantly from deeper aquifers. So a warming climate may not have sufficient control over the overall groundwater storage variability in the region.

The study provides two critical insights – the periods of high precipitation will help in partial recovery of groundwater even when groundwater extraction continues or even increases. However, the projected increase in precipitation may not directly translate to an overall increase in groundwater storage. The opposing influence of evapotranspiration will become dominant in the far period and at higher warming levels.

As per climate projection, the summer monsoon rainfall is projected to increase by 6-8%, and this increase is expected to help recover the lost groundwater. "But even in the most optimistic scenario, the highest projected groundwater recovery (about 260 cubic km) in the near period (2021-2040) will only help recover about 50% of groundwater lost in the last two decades. It is not possible to recover the groundwater that we have already used up," says Prof. Mishra. "So relying on increased rainfall alone for favourable groundwater recovery may not help."

He says that till such time we reduce groundwater usage, a warming climate alone cannot solve the problem. "There is a crucial need to restrict unsustainable groundwater use for irrigation. The projected increase in groundwater use to meet irrigation water requirements can cancel the benefits of increased precipitation in the future. Only then can increased rainfall arising due to climate change help in recovering groundwater storage," Prof. Mishra says.

Efficient irrigation

The possibility of increased frequency of droughts cannot be ruled out. While the impact of droughts at longer frequencies may be less, consecutive years of drought can adversely affect groundwater storage as recharge will be less while extraction of groundwater for irrigation will be higher than when summer monsoon rainfall is normal. "There can even be more challenging situations in future despite the projected increase in rainfall due to climate change. There is a compulsion to make irrigation more efficient and shift crop growing and procuring areas," he says. "The focus should thus be to promote groundwater conservation to ensure long-term sustainability as it plays an important role especially during periods of drought. This applies even when increased rainfall can increase the recharge of groundwater."

Imperative to reduce groundwater use for irrigation

The projected increase in monsoon will be insufficient if there is continued use of groundwater at current levels for irrigation

Caution: Increased rainfall can only help recover about 50% of groundwater lost in the last two decades. SPECIAL ARRANGEMENT

■ Between 2002 and 2022, about 95% of India's groundwater depletion occurred in north India

■ Warming climate will increase the frequency of floods and droughts

■ Warming climate will also increase the amount of summer monsoon rainfall that north India will receive

■ Summer monsoon rainfall, which is projected to increase by 6-8%, can help recover the lost groundwater

■ Use of groundwater from deeper aquifers in the Indo-Gangetic Plain will make it hard for its recovery from increased rainfall

■ So recovery of the depleted groundwater in north India will be insufficient if groundwater is not conserved

■ There is a crucial need to restrict unsustainable groundwater use for irrigation

'Why should we be linked with religion we are not part of'

SPECIAL

Rohan Premkumar
UDHAGAMANDALAM

Indigenous groups in the Nilgiris have raised concerns that the Census of India, which is to be undertaken soon, will not document important distinctions such as language and religion that distinguish the culture of their communities. Such omissions are equivalent to erasure of their unique identities and will diminish the goals of the exercise, they warned.

Elders and activists from the Nilgiris' Adivasi groups, such as the Todas, Kotas and Kurumbas state that their cultures are often pigeon-holed into conforming to labels that the groups are not comfortable with adopting.

Sobha Madhan – an Adivasi rights activist from Gudalur and the district coordinator for the Nilgiris Particularly Vulnerable Tribal Groups Federation – said that Adivasis like the Kurumbas have no formal religion, but instead only worship their ancestors. "Even the temples near to where I live in Ayyankolli, the spirit we pray to is called *Ajji*, or grandmother. How can we identify as Hindu, Christian or Muslim?" she wondered.

She added that Adivasis took great pride in their culture, and it was wrong for the government to try to force them into identifying themselves with a religion and language that they are not a part of.

Denying basic rights
The Badagas of the Nilgiris, the single largest distinct ethno-linguistic community in the Nilgiris also want changes made to the way in which the Census is undertaken. Though the community is not classified as a Scheduled Tribe (ST) by the government, Venugopal Dharmalingam, honorary director of the Nilgiri Documentation Centre (NDC), said the Badagas are among the few communities in India which follow ancestor worship as their main religious belief and ritual.

"By limiting the religious affiliation of the responding citizens to six major religions, the Census has denied the basic rights of a large chunk of the indigenous people to register their age-old religion and mode of worship," he said.

Separate dictionaries
According to Mr. Dharmalingam, the Badagas will also be asked to put down their language that they speak as "Kannada" despite the fact that the Badaga language is independent as made clear by publications of grammars and dictionaries by R. Balakrishnan, C. Pilot-Raichoor and Professor Paul Hockings. Mr. Dharmalingam has written to Nilgiris MP A. Raja to ensure the due rights of indigenous communities in the Census.

Northay Kuttan – a member of the indigenous Toda Adivasi community and president of the Nilgiri Primitive Tribal People's Federation – said that indigenous groups such as the Todas, Kotas, Irulas, Kurumbas, Paniyas and the Kattunayakans already feel neglected.

During the last Census, Mr. Kuttan said entire villages of the Todas and Kotas were not enumerated properly due to the lack of accessibility.

"There must be provisions made in the Census that identify the distinct religion of indigenous communities," he said.

Adivasis like the Kurumbas have no formal religion, but instead only worship their ancestors. M. SATHYAMOORTHY