Every Day, Eight People Die by Lightning in India, Most Never Got a Warning

Lightning killed 2,825 people across India in 2024, more than floods, landslides, and cyclones combined. It was the deadliest natural force in the country for the sixth consecutive year, accounting for 35.7 percent of all 7,903 accidental deaths attributed to forces of nature, according to the National Crime Records Bureau's Accidental Deaths and Suicides in India report 2024 released on May 7, 2026.

On average, nearly eight people died by lightning strike every day in 2024. Most of them were men. Most of them were working outdoors. Most of them never received a warning.

The Numbers and What They Show

Heat and sun stroke killed 1,832 people, a 127.9 percent jump from 806 deaths in 2023, the sharpest single-year increase of any natural cause recorded in the report. Exposure to cold claimed 833 lives. Floods killed 361. Landslides took 351.

Lightning, despite a modest 10.4 percent rise from 2,560 deaths in 2023, remained the dominant killer by a wide margin.

The toll has stayed consistently high for years. Lightning killed 2,357 people in 2018, 2,876 in 2019, 2,862 in 2020, 2,880 in 2021, and 2,887 in 2022. Over six years, the cumulative death toll crossed 17,000. The number has never fallen below 2,300 in that period.

Of the 7,903 people who died from natural forces in 2024, the majority — 57.2 percent — were between 30 and 60 years old. These are working-age adults, the people most likely to be in fields, on construction sites, or tending livestock when storms arrive without warning.

Where Lightning Kills the Most

Madhya Pradesh recorded the highest number of lightning deaths in 2024 at 577, followed by Bihar at 360, Uttar Pradesh at 275, Odisha at 249, and Chhattisgarh at 241.

In smaller states, lightning accounted for nearly all deaths from natural forces. In Goa and Manipur, every single death from natural forces was caused by lightning. In Tamil Nadu, lightning caused 89.2 percent of such deaths. In West Bengal, 85.9 percent.

In Jammu and Kashmir, the Ganderbal lightning strike that killed 90 sheep and goats belonging to a nomadic Bakarwal family in May 2026 illustrated the reach of the hazard into high-altitude grazing areas where no shelter exists and no warning arrives in time.

Why Central India Bears the Heaviest Burden

Madhya Pradesh's dominance in the lightning death toll is not accidental. Professor Manoranjan Mishra, a lightning expert at Fakir Mohan University in Odisha, points to a combination of industrial, environmental, and geographic factors. "Extensive mining, deforestation, and aerosols contribute to lightning activity in the region," he said. "Combined with heating and moisture before the monsoon, this makes central India more vulnerable than the northeast or the south."

Despite its relatively flat terrain, which typically produces fewer strikes than hilly regions, Madhya Pradesh has a population density of approximately 236 people per square kilometre. More people in open spaces means more deaths when storms arrive.

Dr. Sunita Verma, Associate Professor at Banaras Hindu University, identified two specific behaviours that drive the death toll in rural areas. "The high casualties in Madhya Pradesh are due to the lack of an effective early warning system and unsafe sheltering practices among the rural populace, particularly farmers," she said. "Most fatalities occur when individuals seek refuge under trees during thunderstorms, not realising the increased risk."

Dr. Verma said frequent cumulonimbus cloud formation over the region and the near-total absence of public awareness campaigns compound the problem. "The government needs robust mitigation strategies, including timely warnings

and accessible educational campaigns, especially in rural and vulnerable areas," she said.

Climate Change Is Making It Worse

Lightning activity in India has surged by nearly 400 percent between 2019-20 and 2024-25, according to researchers tracking the trend. Scientists link the increase directly to rising temperatures and higher atmospheric moisture.

A 2021 study published in the journal Atmospheric Chemistry and Physics warned that climate change would make lightning both more frequent and more dangerous. Separate research suggests a 12 percent rise in lightning strikes for every one degree Celsius increase in global temperature. Pollution amplifies the effect, aerosols from urban and industrial centres increase electrical activity in the atmosphere above and around them.

Saurabh Kumar, a disaster management official in Madhya Pradesh, said the state uses alerts from the India Meteorological Department to warn residents. "We have implemented an alert system including SMS notifications and the Common Alerting Protocol. This ensures that district authorities and the public receive warnings promptly," he said.

Mishra acknowledged those efforts but said they do not reach the people most at risk. "Many rural families do not own smartphones. We need physical outreach, community shelters, and education on recognising warning signs," he said.

Not a National Disaster — and Experts Say That Matters

Despite killing more than 2,800 people a year, lightning is not classified as a national disaster in India. In February 2024, Biju Janata Dal Member of Parliament Manas Ranjan Mangaraj raised the issue in Parliament, urging the government to include lightning-related deaths under the State Disaster Response Fund. The Union government rejected the demand, stating that deaths could be prevented through awareness alone.

Mishra and other experts argue that the classification matters because it determines resources. "Declaring lightning a national disaster would bring more attention and funding to the issue," Mishra said. He called for updated

building codes to include affordable lightning protection, detailed district-level vulnerability maps, and community shelters in high-risk rural areas.

International models exist. In South Africa, repurposed cargo containers serve as low-cost lightning-safe shelters in rural communities. Public awareness campaigns built around the slogan "When Thunder Roars, Go Indoors" have reduced casualties in several countries.

In India, Odisha began offering compensation to victims' families and saw an improvement in the accuracy of death recording as a result. Better data, officials said, helps design better responses. It does not, by itself, reduce the toll.

Mishra was direct about what it will take. "We need to reach the last mile — the farmers, the grazers, the outdoor workers who are most at risk," he said. "Without that, the numbers will continue to rise."

Ground Report previously reported on the impact of lightning strikes in Jammu and Kashmir, Odisha, Uttar Pradesh and West Bengal, highlighting the administration's inaction.

How Roads Are Killing Madhya Pradesh Leopards

On April 10th, wildlife activist Ajay Dubey received a response to his right to information application filed with the Madhya Pradesh Forest Department. He had asked how many leopards had died between January 2025 and February 2026.

The document stated, over 14 months, 149 leopards had died across the state. And the leading cause: road accidents. Dubey described the numbers as a “grim reality.”

Madhya Pradesh has around 3,907 leopards, as per a 2022 report, an increase from 3,421 recorded in 2018. The same report warned that mitigation measures for road infrastructure were needed to protect wildlife.

Reasons Behind Deaths

The data showed that 113 leopards died in 2025, while 36 deaths were recorded in the first two months of 2026. Road accidents caused 46 deaths, which is 31 percent of the total.

Old age and disease killed 36 leopards, making up 24 percent of deaths. Fights between animals over territory caused 31 deaths. Poaching and revenge killings by humans killed 21 leopards. Eight leopards died after getting caught in electric fencing that farmers put up to protect their crops. Two were caught in snares. For 13 deaths, the cause is still not known.

R. Sreenivasa Murthy, a retired Indian Forest Service officer and former APCCF of the MP Forest Department, said the problem grew slowly over many years as both leopard numbers and road networks expanded together.

"In the last 15 years, the protection status has increased. Because of the overall protection, the numbers are also higher. And the linear infrastructure, which includes roads, is also higher," Murthy said.

Subharanjan Sen, Principal Chief Conservator of Forests and Head of Forests in MP, accepted that more roads mean more risk for leopards.

“We are imposing conditions on new roads being built or road expansions, but not on existing ones. No one else is talking about retrofitting the old roads right now, although we ourselves are saying that there should be retrofitted ones,” Sen said.

Roads in Madhya Pradesh are not just killing leopards. In December 2025, a speeding vehicle hit and killed a cheetah cub on the Agra-Mumbai National Highway near Ghatigaon in Gwalior. It was the first time a road accident had killed a cheetah in India.

Are These Deaths Really 'Natural'?

According to a report by the Hindustan Times, a senior forest official said 149 deaths represent only a 4% loss from a population of around 4,000 leopards in the state. “We expect a minimum of 10% mortality within 12 months in the cat family. Even up to an annual loss of 20 percent is acceptable given that old ones die due to multiple reasons,” the official said.

Dubey rejected this argument. “Has this statement ever been used for humans? When you don't use it for humans, why use it for animals?” he said.

Murthy said the focus should be on reducing preventable deaths. “We should identify areas where there are animal movements. If there are arrangements for overhead passages and underpasses there, they should do that. Unless you give proper time to where and how to do conservation measures, there will be omissions,” Murthy said.

Fencing, Snares, and Revenge Killings

Sen explained why leopards face more danger from farms and villages than tigers do.

“Leopard population is spread across the state, in almost all the forests as well as in areas close to civilisation. This makes them prone to wandering off on to a road or entering a village area where farmers put up electric fencing to keep cattle and other animals away from their crops. But sometimes even animals like leopards and tigers get caught in that,” Sen said.

Murthy confirmed the same pattern. “These electrical wires that we lay in the fields get entangled in them more often. Tigers are more careful. Because to catch their prey, dogs being one of them, or other calves, they also come to the village. So based on this, their deaths also increase.”

A study published by the State Forest Research Institute found leopards living inside municipal boundaries. Researchers counted 23 leopards in and around Indore and nearly 18 in Jabalpur.

When leopards move close to houses and roads, encounters increase. They attack livestock and pets. As per the study, in Jabalpur, leopards were found living on private lands within municipal boundaries. In Indore, they stayed mostly outside the city limits. The study also found that leopards were eating livestock and domestic dogs to survive in these urban areas.

Leopards also face danger in these areas. Vehicles can hit them. They can fall into wells or get trapped in crowded spaces. Rescue becomes difficult inside cities.

The study warns that as cities keep growing, these forest patches and the corridors connecting them are shrinking, pushing leopards closer to people and deeper into danger.

No Public Record, No Pressure to Act

Dubey said leopards have never received the same attention as tigers. “It was going on silently. Smuggling, killings, and getting crushed on roads—all this was happening. Leopards have a strong presence outside tiger reserves, in territorial forests, and in and around villages,” Dubey said.

Murthy said the same gap shows up when road projects get approved. "Everyone wants to speed up every development project. It is possible that these things are not covered because of this. The passes, underpasses, and upper passes for animal movement require proper research. Unless you give it proper time, there will be omissions," he added.

Murthy said the fix is not complicated but requires political will. He said, “There is a lot of talk about tigers. But along with that, we also

need to pay attention to the corridors of other animals. Wherever they move, proper measures should be taken for speed limits. This is the most important issue."

Dubey said that death is a reality. But "being crushed to death on the road" is an "unnatural way" to die. He added, "they are being killed by electric wires. This death is unnatural. Our natural approach is their age, and we don't dwell on that much. But our unnatural approach is getting crushed on the road, building a road in their home, and failing to mitigate it."

Official data from the National Crime Records Bureau shows that animal crossings caused about 1.2 percent of total road accident deaths in 2023, which comes to 2,033 deaths, an increase from 1,509 in 2022.

A 2023 study shows how common wildlife deaths on roads are. The research, published in the Journal of Threatened Taxa, recorded 61 wildlife deaths along a 34 km stretch of highway in Madhya Pradesh. Most of these were birds, but mammals like jungle cats, jackals, civets, and langurs were also killed. The study also identified seven roadkill hotspots along this route.

This shows that road accidents do not affect only large animals like leopards. Many smaller species die regularly on highways that pass through forest areas.

Higher Returns, Ethanol Blending Help Madhya Pradesh's Maize Crop Area's 49% Jump

The state of Madhya Pradesh has become the top producer of maize in India after consistent growth in maize production across years.

A recent study by Rajmata Vijayaraje Scindia Krishi Vishwavidyalaya (RVSKVV) in Gwalior analyzed two decades of MP maize data from 2001 to 2021 and identified three key factors for the growth: comparative profitability relative to other crops, adaptability to diverse agro-climatic conditions, and lower water requirements than paddy and wheat.

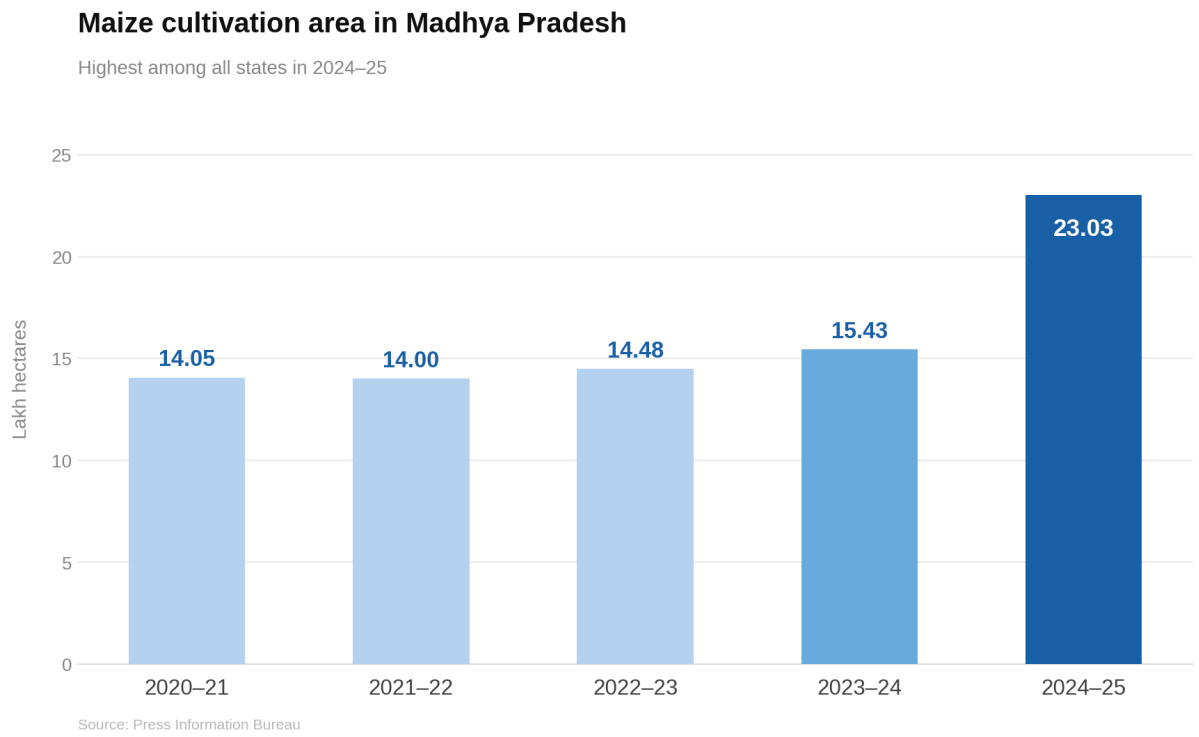
Dr. Aditya Kumar Singh, principal scientist at ICAR-Indian Institute of Maize Research, Ludhiana, said the government's push for ethanol—a fuel made from crops like maize and sugarcane—is the key driver.

"Maize is one of the major crops driving this [ethanol blending] program, and because of that, the area [in Madhya Pradesh] has jumped almost two million hectares within just two years," he told Ground Report.

Amid the growth, vulnerabilities in the US-India trade deal have emerged. The US is the largest producer and exporter of maize (also called corn) with genetically modified varieties and federal subsidies. With mechanized agriculture, the farmers in the United States have better yields per hectare. Many experts think the deal could leave Indian farmers vulnerable, particularly in Madhya Pradesh.

Maize surge

The area under maize increased from 15.43 lakh hectares in 2023–24 to 23.03 lakh hectares in 2024–25. Production rose from 49.33 lakh tonnes to 81.20 lakh tonnes during the same period, according to the state's Economic Survey.



In India, maize feeds four main sectors: animal feed for poultry (44%), followed by bioethanol production (18%), food processing (15%), the starch industry (12%), and animal feed (11%). India is one of Asia's largest maize suppliers, with countries such as Nepal, Bangladesh, Sri Lanka, Bhutan, and Malaysia relying on its exports.

“Maize has transformed from a food crop to an industrial crop, most of it now going to the ethanol industry, while the rest goes to livestock. The demand is rising from ethanol, food processing, and export markets alike,” Dr. Sain Dass, adviser on hybrid crops, National Seeds Corporation & former director, Indian Institute of Millets Research (IIMR), told Ground Report.

“Farmers also shifted to maize as soybeans and other crops were affected by viruses and low-lying area problems. Now, maize has become a remunerative crop. The ethanol industry is there, the food sector is there, and we also have export potential to Nepal, Sri Lanka, Bangladesh, Indonesia, Myanmar, and others," Dr. Dass said.

India’s ethanol blending has reached the 20% target—to blend every liter of petrol with 20% ethanol—five years earlier than planned, in 2030. The All India Distillers' Association (AIDA) said that in the ethanol supply year 2024-25, maize now contributes between 48%

and 51% of the total ethanol supply. Madhya Pradesh contributes 15% of the country's total maize production.

Ethanol produced from maize fetches ₹71.86 per liter from oil marketing companies, the highest procurement rate among all ethanol feedstocks, according to the Ministry of Petroleum and Natural Gas.

“There is already an energy crisis going on globally. That is also pushing the government to accelerate ethanol blending,” Dr. Singh said. India targets 30% ethanol (E30) blending by 2030.

Paddy declines

In May 2022, the state government launched the Crop Diversification Promotion Scheme to reduce farmers' dependence on MSP-driven crops such as paddy and wheat and encourage the cultivation of fruits, vegetables, spices, and oilseeds.

The Economic Survey records a 6.39% contraction in paddy's cultivated area, from 41.50 lakh hectares in 2023-24 to 38.85 lakh hectares in 2024-25. The total paddy harvest followed, falling 2.70% from 142.29 lakh tonnes to 138.45 lakh tonnes.

Ground Report's field visit to Chhindwara, the southern part of Madhya Pradesh, in January 2025 found paddy farmers still counting losses from unseasonal rain that had damaged their paddy crop.

Devinder Sharma, an agricultural and policy expert, said the retreat from paddy in certain regions makes ecological sense. “We should shift away from paddy, where it is not a traditional crop. The ecological and environmental damage is obvious to everyone,” he said.

Paddy is one of India's most water-intensive crops. It takes between 1,500 and 2,000 liters of water to produce one kilogram of paddy grain, according to a study published in the journal Agricultural Research.

And Madhya Pradesh has been identified as a water-stressed state under the central government’s Atal Bhujal Yojana groundwater conservation scheme. On top of that, climate change-induced weather

events, like erratic monsoons, have pushed towards more reliable crops.

What is driving the shift

Dr. Gopal Singh Koshal, former director of agriculture for Madhya Pradesh and Chhattisgarh, pointed to the Rabi season, India's winter crop cycle, sown between October and December, as a key driver of maize's growing appeal. Maize needs water only every 15 to 20 days, unlike wheat or paddy, which needs it every seven days," he said.

Farmers were switching to maize in the Rabi season (winter cropping period) to avoid Kharif (monsoon cropping period) losses. “In the Rabi season, even after a hailstorm, production was 36 quintals per acre,” one farmer said. “Maize gives me 30 to 35 quintals per acre. Wheat gives only 22 quintals at the same price,” another farmer from Chhindwara told Ground Report.

“Our single-cross hybrids [of maize] are now giving almost seven to ten tonnes per hectare: very high productivity,” Singh said.

“Within three to four years of introducing better hybrids, Madhya Pradesh’s maize area doubled. Chhindwara district alone had 3.81 lakh hectares with five times the productivity,” Dr Dass said.

The MSP for maize stood at ₹2,225 per quintal in 2024-25, raised to ₹2,400 per quintal for 2025-26 following a Cabinet decision. "Since farmers are getting a very good assured price through MSP,” Dr. Singh said.

Potential Impact of Trade Deal

India is negotiating a bilateral trade deal with the United States and American maize (called corn in the US). The US grows 380 to 430 million tonnes of maize every year, at an average yield of 11 tonnes per hectare.

Indian farmers average 3.7 tonnes per hectare, a gap Union Agriculture Minister Shivraj Singh Chouhan acknowledged at the Federation of Indian Chambers of Commerce and Industry (FICCI) Maize Summit in July 2025.

American subsidies and export infrastructure push prices down further, which many believe Indian farmers can’t compete with.

India brought in 0.9 million tonnes of maize in 2024, an almost 8000% jump from 2023. This was more than all imports over the previous seven years combined.

How IISER Scientists Used AI to Map the Future of Bhojtal Lake

The scientists at the Indian Institutes of Science Education and Research (IISER) Bhopal and Maulana Azad National Institute of Technology (MANIT) spent fifteen months developing an artificial intelligence model to monitor and reconstruct decades of missing satellite data and predict the future of Upper Lake, also called Bhojtal Wetlands, in Bhopal.

Using the model, the research team led by Dr. Roshan Nath and including Dr. Somil Swarnkar, Dr. Vikas Poonia, and Dr. Vinod Kurmi found that if global temperatures rise by two degrees Celsius, the threshold set by the 2015 Paris Agreement, the Upper Lake could shrink by up to 40 percent during pre-monsoon dry spells.

Seasonal water levels would swing more violently. “The lake faces more frequent dry spells and weaker recharges,” Dr. Somil Swarnkar, a member of the research team, told Ground Report.

Dr. Lokendra Thakkar, officer in charge of the Madhya Pradesh State Wetlands Authority, said, “We appreciate it as a valuable piece of research, especially its use of AI-based tools,” Thakkar told Ground Report.

This man-made lake, a designated Ramsar site since 2002, serves almost 1.8 million people and 40 percent of Bhopal's drinking water needs.

What the AI Actually Does

The research was based on Landsat satellite imagery covering Bhojtal from 1990 to 2022.

“Satellite imaging often results in data gaps due to cloud cover or technical constraints,” said Dr. Swarnkar. “This makes it challenging to record pond water levels.”

Apart from cloud cover, there were other issues. A scan line corrector failure in Landsat 7, a broken part that kept satellite image strips aligned, left every image taken after 2003 with jagged gaps running through them. Sensor limitations meant the satellite could not capture usable data at all during certain months. Together, these problems created striping errors and blank stretches across years of data. Nearly 40 percent of the original images were classified as poor quality or unusable.

The team developed an AI model to fix this gap.

Dr. Swarnkar explained the model in simple terms. “... we have multiple data points containing water surface values. We link those values to the rainfall of that month or to the rainfall three months prior. If rainfall decreased three months prior, the lake's surface area will undoubtedly decrease. If temperature increases in a particular month, the surface area will undoubtedly also decrease."

The model connects four climate variables to the lake's surface area: rainfall, temperature, evaporation, and soil moisture. It learns from historical data how these variables relate to the lake’s size.

“Many relationships in nature are compounding,” Dr. Swarnkar said. “AI can explain and predict rainfall and temperature effects very well, better than the governing equations provided by physics-based models, because it incorporates nonlinear interactions, randomness, and everything together.”

The team used two AI tools in sequence. The first, a feed-forward neural network, filled the missing months. It was trained on 259 valid observations, then used to reconstruct 125 missing monthly values.

“With the help of our first deep learning model, we can fill data gaps up to a certain extent,” Dr. Swarnkar said. “Once that data gap is filled, we can make time series predictions.”

The team took existing frameworks and trained them on Bhojtal Lake data for the first time in India.

Like how engineers developed Microsoft Word, and we use it for writing and drafting. Dr. Swarnkar explained, “In the same way, the LSTM model was developed abroad by Sepp Hochreiter and Jürgen Schmidhuber in 1997, but we built our own framework specifically for this lake.”

Roshan Nath, who led the technical work and is co-author of the research paper, said the same. “The model already existed, but nobody had trained it this way before. The model we trained on Bhojtal Lake is new,” he said.

The second tool, a Long Short-Term Memory model, or LSTM, was built for prediction. It is a sequential learning model trained on the reconstructed record. The team then ran the LSTM forward using climate projections for a world two degrees warmer.

The combined framework achieved about 90 percent accuracy against historical observations. “The model carries an error of 2.1 square kilometers, meaning predictions could occasionally overshoot or undershoot by that margin, but with 90 percent accuracy overall, the framework captures the broad patterns reliably,” Dr. Swarnkar said. “The main reason is our satellite-derived dataset. Even within that, we still have gaps that haven’t been filled.”

Scientists around the world use AI to study water. In the United States, researchers used LSTM to track temperatures in the Great Lakes. In China, scientists used it to monitor water levels in Dongting Lake. In Hungary, researchers used it to forecast river levels. In India, a team from Sri Sairam Institute in Chennai used a similar model to track changes in water bodies across the country using satellite images.

But no study used satellite climate data, rainfall, temperature, evaporation, and soil moisture to predict how much a specific lake would shrink in a warmer future. “I did not find any literature regarding this," Nath said. “Nobody has done this kind of training using satellite-derived climate data to get the water surface area.”

Water Quality, Climate Pressures

“At present, with this model, we can predict the surface area completely,” Dr. Swarnkar said. “The second aspect, water quality, AI tools can be made for that too. But we need a higher-quality dataset. If we have continuous data records and measurements, then four to five years down the line, we will be able to generate such models that can help us find out the pattern of how it is evolving.”

Though there is knowledge about the quality of Bhojtal’s water, a government audit found that Upper Lake contains between 1,480 and 2,050 microplastic particles per cubic meter. The lake receives a daily sewage inflow of around 44 million liters. These microplastics include fibers and fragments small enough to enter the food chain through fish and birds.

Before 1947, Upper Lake water was considered so clean that it required no treatment at all. Over time, rapid population growth and human activity increased pressure on the lake. Pollution, sewage inflow, and runoff have degraded water quality to the point where extensive treatment is now essential.

The model can separate what the climate is doing to the lake from what humans are doing to it. “I will turn off the human factor and only vary the climate factor,” Dr. Swarnkar explained.

Between 1995 and 2005, the MP government implemented the Bhoj Wetland Conservation Project, partly funded by the Japan Bank for International Cooperation (JBIC). Despite this, researchers note little improvement in water levels and overall water quality.

The new model can now help identify which actions worked and which did not, giving policymakers a clearer way to target future interventions. "If we can find out where we should keep our monitoring and where we have to manage hotspots, then there are high chances we will be able to do very good work in the direction of conservation," Dr. Swarnkar said.

A separate study found that settlements around Bhojtal have nearly doubled in the past decade, with many built in high flood-risk areas. This growth has reduced core wetland areas and increased pressure on the lake.

Saurabh Popli, a landscape planner and associate professor at the School of Planning and Architecture, said this pattern reflects how cities are planned across India. “Planning has largely followed one-size-fits-all ideas, even though climates and local conditions differ sharply,” he said.

Dr. Swarnkar put it simply, “Water security defines our era. Cities can now turn predictions into action before lakes run dry.”

In 2019, severe drought conditions developed, and the lake fell to about 60 percent below its normal level. Dr. Swarnkar recalled speaking to Bhopal residents who described flying kites inside the empty basin.

"Droughts are predictable. Our aquifers are drying up. In South Africa, in Chennai, there are cities where groundwater is about to reach zero,” Popli said such crises are foreseeable and not unique to Bhopal. “There is no coordination between science, policy, and planning practice today,” he told Ground Report.

What Two Degrees Does to the Lake

“When the temperature increases by plus two degrees, 40 to 50 percent of surface water will decrease in the summer period,” Dr. Swarnkar said. “If the temperature increases, evaporation will increase, there will be water loss from the lake, and there will be changes in the rainfall pattern.”

Thakkar said the State Wetland Authority already works with institutions like IITs, IISER, and the Indian Institute of Soil Sciences (IISS), Bhopal, to bring science into policy.

“We have commissioned a project to develop an AI-based, real-time monitoring system for five Ramsar sites in the state, including Bhoj Wetland,” Thakkar said. The project has been assigned to MPSEDC, the IT arm of the state government.

The same model logic applies to glacier lakes in the Himalayas, where snowmelt is accelerating and glacial outburst flood risk is rising. It works wherever satellite data exists, and ground-level measurements are scarce. The researchers say this model can be adapted for all Ramsar sites.

Thakkar acknowledged a wider challenge: “Wetlands are sectoral issues. Nearly ten to twelve departments and a dozen laws govern them, which makes coordination difficult.” He added that citizen behavior matters as much as policy. “Effective wetland protection depends on both law-abiding citizens and accountable enforcement,” Thakkar said.

Monsoon 2026: IMD Warns of Below-Normal Rainfall, Madhya Pradesh Faces Drought Risk

The India Meteorological Department issued its first long-range forecast for the 2026 southwest monsoon on April 13. The department said total rainfall between June and September will be around 92 percent of the Long Period Average, or LPA. The LPA is based on data from 1971 to 2020 and stands at about 870 millimetres. This year, the country is likely to get around 800 millimetres of rain, give or take 5 percent.

Mrutyunjay Mohapatra, Director General of Meteorology at IMD, said this puts the forecast in the "below normal" category. IMD calls anything between 90 and 95 percent of the LPA as below-normal. The chance of very low rainfall, below 90 percent, is 35 percent, more than double the usual 16 percent. The chance of a normal monsoon is only 27 percent, against the usual 33 percent.

Most of India will get less rain than normal this season. Places that may still see normal to good rain include Ladakh, Arunachal Pradesh, parts of the northeast, and some areas in Chhattisgarh, Andhra Pradesh, Telangana and Tamil Nadu.

For Madhya Pradesh, the situation looks worse than most other states. IMD Bhopal scientist Divya Surendran said most districts in the state have a 35 to 50 percent chance of below-normal rainfall.

Areas like Indore, Ujjain, Gwalior, Chambal, Jabalpur, Rewa, Shahdol, Sagar, and Narmadapuram are expected to get less rain than normal. Only areas near Bhopal-Vidisha, Seoni-Balaghat and the Khargone-Khandwa border may see near-normal rain.

The state's normal rainfall is 37.3 inches. This year, total rain is expected to be between 30 and 32 inches.

How MP Compares to Other States

Despite this, MP's situation is less dire than that of many other states that will face. Dr. Ved Prakash Singh, Director of Meteorological Centre Bhopal, said the reasons lie in the current Pacific conditions.

"The La Niña situation is currently weak. El Niño conditions can develop in the second half of the monsoon, the August-September period, which is not good for rainfall. That is why rainfall is likely to remain around 94 to 95 percent," he said.

In simple terms, MP is at the less severe end of a bad national forecast, affected, but not the hardest hit.

July Fine, But August-September Is Worry

One clear signal from IMD is that the monsoon will arrive later than usual this year. Dr. Prakash said it will not follow the usual June 10 to 15 timeline.

"The monsoon onset, which people expect around June 10 to 15, will likely begin around June 20," he said. "Between June 20 and 30, the monsoon will cover the entire state."

This delayed arrival compresses the sowing window for Kharif crops and reduces the buffer time farmers have to prepare fields after the first rains.

Dr. Prakash was clear that the concern is not with the entire monsoon season equally. July is expected to pass without major problems. The real challenge will come in the second half.

"There is no problem with rainfall in July. But if El Niño conditions develop by September, there will be a rainfall problem," he said. "For rice crops especially, farmers will have to rely on their own irrigation sources. From August to September, at least once or twice, instead of depending on rain, farmers will need to use artificial irrigation."

This is an important warning for paddy farmers in MP, who depend on steady September rain for their crop to finish growing.

Dr. Prakash also placed the 2026 forecast in the context of the state's recent rainfall history, offering some reassurance alongside the caution. "Only twice has rainfall been below normal in MP in recent years. Most of the time, rainfall has been above normal," he said.

He specifically pointed to 2016 and 2019 as the two years when the state recorded below-normal rainfall between 92 and 95 percent. In contrast, the past three years saw rainfall of 106 to 108 percent of normal.

IMD's own annual data supports this. West MP received 1,095.6 mm against a normal of 877.3 mm in the 2025 southwest monsoon season, a departure of 25 percent above normal. East MP received 1,219.4 mm against a normal of 1,043.4 mm, a departure of 17 percent. In 2025, MP's total monsoon rainfall stood at 121 percent of normal, 15 percent above the forecast estimate.

Looking at the last decade, 2017 was the driest year with only 29.9 inches against a normal of 37.3 inches. The wettest year was 2019 with 53 inches.

El Niño: Primary Risk Factor

The main reason behind this year's weak forecast is El Niño. Right now, weak La Niña conditions in the Pacific are fading toward neutral. IMD's forecast system expects El Niño to develop during the monsoon season, with its effects showing up after June.

Mohapatra said that between 1951 and 2023, there were 16 El Niño years, and in nine of them, India saw very low monsoon rainfall. Since 1980, around 70 percent of El Niño years have come with a poor monsoon.

Climate scientist and former IMD Director General K J Ramesh highlighted that El Niño is not the only factor. "We also forget that there is another major driver for monsoon rainfall, which is global warming. We have been observing excess moisture being added to the monsoon rainfall since 2000," he told Down To Earth.

Two factors could partly balance out El Niño's effect. The Indian Ocean Dipole, or IOD, is expected to turn positive toward the end of the monsoon, which usually means better rainfall over India. Also, snow cover over the northern hemisphere and Eurasia from January to March 2026 was slightly below normal, a sign that has historically been linked to stronger monsoons.

Private forecaster Skymet, which gave its forecast on April 6, put rainfall at 94 percent of LPA, slightly better than IMD but still below normal. Skymet also warned that the second half of the monsoon could be especially unpredictable.

What Farmers Must Prepare For

About 60 percent of India's farmers depend fully on the monsoon for Kharif crops. In MP, the back-to-back good monsoons had pushed soybean output up by two quintals per hectare and kept enough water for wheat.

This year, farmers should not expect the same. Dr. Prakash's advice is clear: plan for dry spells in August and September, arrange irrigation alternatives in advance, and do not delay sowing if the monsoon arrives on time around June 20.

IMD will release its updated forecast in the last week of May 2026, with more detail for central India and individual areas. Until then, the broad picture is clear: 2026 will need more careful water planning than the past two years did.

India's Bats Are Disappearing, A New Report Shows How Serious Crisis Has Become

On 17 April, a national report on India's bats delivered an urgent warning for Madhya Pradesh, a cave in Jabalpur that once sheltered one of the world's rarest bat species may now be empty.

The Durga Das's Leaf-nosed Bat, known only from a handful of sites in India, was last documented in a narrow cave on a limestone hillock in Jabalpur district. The State of India's Bats (2024-25) report calls for an immediate re-survey of the site. Urban expansion has swallowed much of the bat's former habitat since 2013, and researchers believe the species may have disappeared from the area entirely.

Madhya Pradesh carries a second loss. Historical records show that the Champa Baoli monument once hosted colonies of Black-bearded Tomb Bats and Leschenault's Rousettes. Both colonies are now gone. Researchers attribute their disappearance to mounting tourism pressure at the site.

The State of India's Bats (2024-25) is the first comprehensive national bat assessment in nearly two decades. Thirty-six bat experts from 27 institutions compiled the 200-page report over two years. The Nature Conservation Foundation (NCF), Bat Conservation International (BCI), WWF-India, and the Centre for Wildlife Studies released it jointly on 15 April.

India is home to at least 135 bat species, more than any other mammal group in the country. Of these, 16 are found nowhere else on Earth. Seven are officially classified as threatened by the International Union for Conservation of Nature. A further 35 species carry so little data that their conservation status remains unknown.

Fewer than 50 dedicated bat researchers work across the entire country.

Rohit Chakravarty, bat researcher at NCF and BCI and a lead author of the report, said the shortage of researchers puts lesser-known species at serious risk. "There are seven species that are data-deficient and endemic to India. They are all extremely rare and we know far too little to claim that they are safe or threatened," he told Ground Report.

"One of them, Peter's Tube-nosed Bat, has not been seen since 1872. We need to train more people on the ground to ensure these species are not lost in oblivion," he said.

Aditya Srinivasulu, a research affiliate at the Zoo Outreach Organisation in Hyderabad and a contributor to the report, said the data gap runs deep. "We have extremely limited government data. When a sighting is made, or we need information, most bat researchers reach out among themselves," he said.

Caves, Monuments, and Vanishing Roosts

The report maps where bats live, and where they are losing ground. Most species roost outside protected forests, in caves, tree hollows, temples, old buildings, and historical monuments.

The critically endangered Hipposideros hypophyllus is known from just one cave at the base of a granite hill in Kolar district, Karnataka. The vulnerable Durga Das's Leaf-nosed Bat shared that cave and also used the now-threatened Jabalpur site.

The Durga Das's Leaf-nosed Bat (Hipposideros durgadasi) lives only in India. Scientists first found it in Jabalpur, Madhya Pradesh, in 1970. No one has confirmed a sighting there since the early 1990s. Urban expansion has destroyed its cave roosts. Only 150 to 200 mature individuals are believed to survive today, and that number is falling.

The IUCN lists it as Vulnerable, with a decreasing population and no known population estimate. Researchers later found it in Kolar, Karnataka, where illegal granite mining now threatens its remaining caves. No conservation measures currently protect this species.

"As of 2021, colleagues confirmed the Durga Das's Leaf-nosed Bat was still being seen in Katangi, near Jabalpur. Unfortunately, the two sites within Jabalpur city where it was previously found, Richhai and Katanga, have been completely developed," Chakravarty said.

"The species is now known to be more widespread than previously thought. We have confirmed it in Kolar, Karnataka, and in Mirzapur district in Uttar Pradesh. So the species is no longer at risk of going extinct, but

we need to monitor these populations closely to prevent future threats," he said.

In Mahabaleshwar, Maharashtra, Robber's Cave holds what may be the largest known single roost of Phillip's long-fingered bat, an estimated one lakh individuals during the breeding season.

Urban India presents a different picture. Delhi has 15 bat species, the highest count among all Union territories. But the city's monuments, on which many of these bats depend, have become contested ground. The Archaeological Survey of India has, in multiple cases, removed bats from protected sites by installing bright lights, sealing roosting spaces, and using chemical cleaning to remove droppings.

"At sites like Qutb Minar, Khirki Mosque, Feroz Shah Kotla, and Agrasen ki Baoli in Delhi, and Daulatabad Fort in Maharashtra, restoration efforts have disrupted resident bat colonies," the report stated.

In only rare cases have bats been allowed to remain. Golconda Fort in Hyderabad and Delhi's Zafar Mahal are among the exceptions.

What Bats Do, and Why Losing Them Matters

Bats pollinate plants, disperse fruit seeds, control agricultural pests, and contribute to soil nutrition through their droppings. The report stresses that these services are poorly quantified, which weakens their use in conservation policy and public awareness.

Flying foxes in Delhi have been found carrying traces of mercury, copper, chromium, and manganese, all linked to environmental pollution. Their IUCN status has already shifted from least concern to near threatened.

Chakravarty said the threats are compounding. "Flying foxes have gone from 'least concern' to 'near threatened'," he said.

"Bats are facing severe threats from urbanisation, even renewable energy infrastructure. The perception around the creatures needs to change to understand their ecosystem services," he said.

Chakravarty added that pollution in the Yamuna River also harms bats directly. Many species skim the surface of rivers to catch insects and end up drinking contaminated water.

The report also acknowledges that the Covid-19 pandemic deepened public fear of bats by framing them as disease carriers. The WHO has stated that available evidence suggests the virus spilled over from bats, either directly or through an intermediate host.

But the report argues this attention worsened an already difficult research environment. Obtaining research permits remains slow due to bureaucratic hurdles. Until 2022, most bat species were legally classified as vermin under India's Wildlife Protection Act, 1972, leaving them without protection and open to being hunted without a licence.

Where Diversity Lives & Where Research Does Not Reach

West Bengal leads the country with 68 bat species, followed by Meghalaya with 66 and Uttarakhand with 52. Kerala and Karnataka record 41 each. Punjab and Haryana have only five recorded species each, reflecting limited forest cover and expanding agricultural land.

Most bat research has concentrated in southern India, particularly the Western Ghats biodiversity hotspot. The Himalayas, Northeast India, and the Andaman and Nicobar Islands remain comparatively understudied. States within the Eastern Ghats and the Terai lowland regions are among the least surveyed.

The report calls for expanded acoustic monitoring to study bat echolocation calls, improved taxonomic research, stronger legal protection, and better public engagement. It also recommends increased surveillance for pathogens in Northeast India and the Western Ghats to reduce the risk of zoonotic disease outbreaks.

On monuments specifically, the report calls on the ASI to work with researchers and conservationists to develop ethical tourism guidelines around bat colonies, and to find ways to prevent structural damage without evicting the animals.

"Large bat colonies may cause structural damage to monuments and deter tourists from visiting," the report stated. "ASI can work with bat researchers and conservationists to use these sites as an opportunity for bat-related education."

Chakravarty said the report's recommendations to ASI are yet to be formally communicated. "Reports will be sent to select ASI circles soon," he said.

Chakravarty said the data gaps alone justify urgent intervention. "A number of these species are endangered and hard to find. Thirty-five species are data deficient, which essentially means there is limited data around them. They require attention," he said.

How Kashmir’s snow trout, fishermen who depend on it are disappearing together

This proposal aims to shed light on accelerating extinction of Kashmir's indigenous snow trout (*Kashir gaad / Schizothorax*) and collapse of fishing communities whose livelihoods, food security, and cultural identity are disappearing with it. When I was 13, my father used to catch snow trout from Sindh River near our home in Kangan. Today, if you try for ten full days on that same stretch, you will hardly be lucky to catch one.

My father eventually left this work, there was simply nothing left to catch. He was not alone. Over 93,000 people in region depend on fisheries for their livelihood, sector contributes 23% of territory's GDP alongside agriculture. Of 16 snow trout species documented in Kashmir in 1838, only five remain today, eight are confirmed extinct, two of surviving five are vanishing rapidly.

In Gund village, fisherman Showkat Wani, 43, now catches barely 1.5 kg of fish a day, down from over 5 kg five years ago. "My net is filled with plastic bags more than fish," he says. In November 2025, dozens of snow trout were found floating dead on Wular Lake, India's largest freshwater lake, in a mass die-off that went almost unreported. Climate change is at heart of this crisis.

River Jhelum has seen a 50% decline in water levels in 2025 due to rising temperatures and dry spells. Over 18% of J&K's glaciers have retreated, winter 2023–2024 was driest on record. As glaciers shrink, rivers run shallow, warm and snow trout have nowhere left to go. On top of this, 92 urban local bodies dump untreated sewage into rivers, illegal sand mining destroys spawning grounds, pesticide runoff causes eutrophication.

But solutions exist. Researchers at SKUAST-K have developed a seed production breakthrough for Kashir gaad, breeding fingerlings in controlled conditions, releasing them into rivers and lakes. This story reports not just collapse but a clear path forward.

Why should readers care?

Snow trout extinction threatens 93,000 fishing families, traditional festivals like syundar and aqiqah. In Ganderbal, Gujjar Bakarwal communities along Sindh River also depend on snow trout for food and income. These marginalized communities have no alternative livelihood to fall back on.

Why now? What's new?

In Nov 2025, SKUAST-K's Faculty of Fisheries is breeding Kashir gaad fingerlings through artificial propagation and releasing them into rivers, lakes like Dal Lake, River Jhelum, had almost zero media coverage.

How did I get this idea? Why am I best person?

Direct conversations with fishermen, ichthyologists at SKUAST-K, meteorologists at IMD Srinagar inform this reporting. Living in Kangan gives me access no outside journalist can replicate. And as a local and close to these river i have first hand information about whole area.

How is this story different?

Most Kashmir coverage focuses on Dal Lake. This story goes to rarely reported rivers like Sindh and Lidder, and gives voice to marginalized communities, including Gujjar and Bakarwal families, who are never heard in mainstream coverage.

Lightning killed 2,825 people across India in 2024 — more than floods, landslides, and cyclones combined. It was the deadliest natural force in the country for the sixth consecutive year, accounting for 35.7 percent of all 7,903 accidental deaths attributed to forces of nature, according to the National Crime Records Bureau's Accidental Deaths and Suicides in India report released on May 7, 2026.

On average, nearly eight people died by lightning strike every day in 2024. Most of them were men. Most of them were working outdoors. Most of them never received a warning.

The Numbers and What They Show

Heat and sun stroke killed 1,832 people — a 127.9 percent jump from 806 deaths in 2023, the sharpest single-year increase of any natural cause recorded in the report. Exposure to cold claimed 833 lives. Floods killed 361. Landslides took 351.

Lightning, despite a modest 10.4 percent rise from 2,560 deaths in 2023, remained the dominant killer by a wide margin.

The toll has stayed consistently high for years. Lightning killed 2,357 people in 2018, 2,876 in 2019, 2,862 in 2020, 2,880 in 2021, and 2,887 in 2022. Over six years, the cumulative death toll crossed 17,000. The number has never fallen below 2,300 in that period.

Of the 7,903 people who died from natural forces in 2024, the majority — 57.2 percent — were between 30 and 60 years old. These are working-age adults, the people most likely to be in fields, on construction sites, or tending livestock when storms arrive without warning.

Where Lightning Kills the Most

Madhya Pradesh recorded the highest number of lightning deaths in 2024 at 577, followed by Bihar at 360, Uttar Pradesh at 275, Odisha at 249, and Chhattisgarh at 241.

In smaller states, lightning accounted for nearly all deaths from natural forces. In Goa and Manipur, every single death from natural forces was caused by

lightning. In Tamil Nadu, lightning caused 89.2 percent of such deaths. In West Bengal, 85.9 percent.

In Jammu and Kashmir, the Ganderbal lightning strike that killed 90 sheep and goats belonging to a nomadic Bakarwal family in May 2026 illustrated the reach of the hazard into high-altitude grazing areas where no shelter exists and no warning arrives in time.

Why Central India Bears the Heaviest Burden

Madhya Pradesh's dominance in the lightning death toll is not accidental. Professor Manoranjan Mishra, a lightning expert at Fakir Mohan University in Odisha, points to a combination of industrial, environmental, and geographic factors. "Extensive mining, deforestation, and aerosols contribute to lightning activity in the region," he said. "Combined with heating and moisture before the monsoon, this makes central India more vulnerable than the northeast or the south."

Despite its relatively flat terrain — which typically produces fewer strikes than hilly regions — Madhya Pradesh has a population density of approximately 236 people per square kilometre. More people in open spaces means more deaths when storms arrive.

Dr. Sunita Verma, Associate Professor at Banaras Hindu University, identified two specific behaviours that drive the death toll in rural areas. "The high casualties in Madhya Pradesh are due to the lack of an effective early warning system and unsafe sheltering practices among the rural populace, particularly farmers," she said. "Most fatalities occur when individuals seek refuge under trees during thunderstorms, not realising the increased risk."

Dr. Verma said frequent cumulonimbus cloud formation over the region and the near-total absence of public awareness campaigns compound the problem. "The government needs robust mitigation strategies, including timely warnings and accessible educational campaigns, especially in rural and vulnerable areas," she said.

Climate Change Is Making It Worse

Lightning activity in India has surged by nearly 400 percent between 2019-20 and 2024-25, according to researchers tracking the trend. Scientists link the increase directly to rising temperatures and higher atmospheric moisture.

A 2021 study published in the journal Atmospheric Chemistry and Physics warned that climate change would make lightning both more frequent and more dangerous. Separate research suggests a 12 percent rise in lightning strikes for every one degree Celsius increase in global temperature. Pollution amplifies the effect — aerosols from urban and industrial centres increase electrical activity in the atmosphere above and around them.

Saurabh Kumar, a disaster management official in Madhya Pradesh, said the state uses alerts from the India Meteorological Department to warn residents. "We have implemented an alert system including SMS notifications and the Common Alerting Protocol. This ensures that district authorities and the public receive warnings promptly," he said.

Mishra acknowledged those efforts but said they do not reach the people most at risk. "Many rural families do not own smartphones. We need physical outreach, community shelters, and education on recognising warning signs," he said.

Not a National Disaster — and Experts Say That Matters

Despite killing more than 2,800 people a year, lightning is not classified as a national disaster in India. In February 2024, Biju Janata Dal Member of Parliament Manas Ranjan Mangaraj raised the issue in Parliament, urging the government to include lightning-related deaths under the State Disaster Response Fund. The Union government rejected the demand, stating that deaths could be prevented through awareness alone.

Mishra and other experts argue that the classification matters because it determines resources. "Declaring lightning a national disaster would bring more attention and funding to the issue," Mishra said. He called for updated building codes to include affordable lightning protection, detailed district-level vulnerability maps, and community shelters in high-risk rural areas.

International models exist. In South Africa, repurposed cargo containers serve as low-cost lightning-safe shelters in rural communities. Public awareness campaigns built around the slogan "When Thunder Roars, Go Indoors" have reduced casualties in several countries.

In India, Odisha began offering compensation to victims' families and saw an improvement in the accuracy of death recording as a result. Better data,

officials said, helps design better responses. It does not, by itself, reduce the toll.

Mishra was direct about what it will take. "We need to reach the last mile — the farmers, the grazers, the outdoor workers who are most at risk," he said. "Without that, the numbers will continue to rise."

How Gutkha Became MP's Most Common Household Habit, Despite Banned

No large state in India has a gutkha problem as severe as Madhya Pradesh. That is not an inference or an estimate. It is what India's own household data says.

In 2011–12, 4.2 percent of rural households in Madhya Pradesh consumed gutkha. By 2023–24, that figure had risen to 62.3 percent. More than six in ten rural households in the state now consume a product that the International Agency for Research on Cancer classifies as a Group 1 carcinogen in the same category as asbestos and benzene.

The data comes from a February 2026 working paper published by the Economic Advisory Council to the Prime Minister (EAC-PM), authored by Dr. Shamika Ravi, a member of the council, and Partha Protim Barman, a young professional at the EAC-PM.

The paper draws on unit-level data from India's Household Consumption Expenditure Survey for 2023–24 and compares it against the National Sample Survey of 2011–12. Its conclusion on Madhya Pradesh is unambiguous: the state has the highest gutkha consumption incidence of any large state in the country, in both rural and urban areas.

Numbers Madhya Pradesh Cannot Escape

The rural figure of 62.3 percent is the headline, but the urban data is almost as alarming. In 2011–12, 2.78 percent of urban households in Madhya Pradesh consumed gutkha. In 2023–24, that number stood at 48.03 percent — again, the highest among large states. Nearly half of all urban households in the state now consume a product that was supposed to be banned.

Overall tobacco consumption in the state tells a similar story. In rural Madhya Pradesh, 73.8 percent of households consumed any form of tobacco in 2011–12. By 2023–24, that had climbed to 89 percent — making it the highest among all large states in the country, behind only the smaller North-Eastern states of Tripura, Arunachal Pradesh and Mizoram in the all-India ranking.

The burden is sharpest at the bottom of the income ladder. Among the poorest 40 percent of rural households in Madhya Pradesh, gutkha consumption stands at 58.6 percent, according to the EAC-PM paper. In states like Madhya Pradesh, Uttar Pradesh and Bihar combined, the paper notes, more than 85 percent of bottom-40 households consume tobacco in some form.

Cigarette consumption in the state has also surged. In urban Madhya Pradesh, the share of households smoking cigarettes grew by 312 percent over the survey period from 6.39 percent to 23.04 percent. In rural areas, it rose from 1.43 percent to 9.7 percent.

India's Tobacco Crisis in Numbers

Madhya Pradesh's crisis sits atop a national one. Between 2011–12 and 2023–24, the number of rural households consuming any form of tobacco rose from 9.9 crore to 13.3 crore a 33 percent increase in just over a decade. Urban India saw a steeper climb: tobacco-consuming households jumped 59 percent, from 2.8 crore to 4.7 crore.

Bidi, the traditional hand-rolled product, is declining. Packaged and branded products have surged in its place. Gutkha drove the sharpest rise. The share of rural households consuming it increased 565 percent nationally from 5.3 percent in 2011–12 to 30.4 percent in 2023–24. In cities, the increase was 544 percent. Cigarette consumption rose 171 percent in rural areas and 156 percent in urban ones.

Even after adjusting for inflation, rural households spent 58 percent more on tobacco in real terms over the period. Urban households spent 77 percent more.

The Ministry of Health and Family Welfare estimates tobacco causes nearly 13 lakh deaths in India every year. Non-communicable diseases cardiovascular illness, cancer, respiratory conditions — now account for 63 percent of all deaths in the country, with tobacco as a leading driver.

What Research Says About Product

Gutkha is a compressed mixture of tobacco, areca nut, slaked lime and flavoring agents. A 2017 study published in Epidemiology and Health by Niaz and colleagues documented how the product's tobacco-specific nitrosamines compounds called NNN and NNK — cause direct DNA damage, triggering uncontrolled cell growth. The areca nut component independently causes oral submucous fibrosis, a progressive scarring of the mouth tissues that is a recognized precursor to oral cancer. The study found that chewing gutkha raises oral cancer risk 8.7 times compared to non-users.

The health cost extends beyond individual households. A 2022 study by John and Dauchy, published in Nicotine and Tobacco Research, estimated that diseases caused by secondhand smoke exposure alone impose an economic burden of Rs 56,700 crore on India annually — equivalent to 0.33 percent of GDP and 8.1 percent of total healthcare expenditure. That figure covers smoke tobacco only; the costs attributable to smokeless tobacco such as gutkha are additional.

An earlier study also published in Nicotine and Tobacco Research in 2021, calculated that the economic costs of tobacco-related disease and death in India exceed one percent of GDP. For every hundred rupees the government collects in tobacco excise taxes, Indian society absorbs 816 rupees in costs through healthcare, lost productivity and premature death.

A Ban That Did Not Hold

On March 31, 2012, Madhya Pradesh became the first State that banned gutkha under the Food Safety and Standards Act. The data makes clear that the ban has not worked.

The EAC-PM paper identifies the mechanism: manufacturers split the product into two legally distinct components, pan masala and loose tobacco, sold separately in coordinated pouches designed to be combined by the consumer. The paper describes this as the "twin sachet" method, and calls it out directly: "The twin-product strategy selling pan masala and tobacco separately to circumvent bans — has hollowed out enforcement."

Surrogate advertising has compounded the regulatory failure. The Cigarettes and Other Tobacco Products Act of 2003, known as COTPA, bans direct tobacco advertising. Gutkha brands have responded with campaigns for pan masala and flavored cardamom products, fronted by Bollywood celebrities and running during cricket broadcasts. "Gutkha advertisement goes unabated and big Bollywood stars promote gutkha under the fig leaf of 'silver coated cardamom,'" the paper states. The product is theoretically banned. The marketing for its components runs freely on national television.

COTPA also prohibits selling tobacco products within 100 yards of schools and to anyone under 18. The paper notes these provisions are "not enforced properly" — a conclusion visible to anyone who has walked past a kirana shop near a school in any town in the state.

The Fiscal Trap

The EAC-PM paper frames Madhya Pradesh's tobacco crisis not only as a public health failure but as a fiscal one. The government's Ayushman Bharat scheme which provides up to five lakh rupees per family per year in health coverage — now covers more than 12 crore families nationally, concentrated among the bottom 40 percent of income earners. Government health expenditure as a share of total health spending rose from 29 percent to 48 percent between 2015 and 2022. Out-of-pocket spending fell sharply.

The paper identifies this as a structural risk: when the government absorbs the cost of medical treatment, the financial deterrent against risky behavior weakens. "When government takes care of healthcare costs, people may feel less urgency to avoid unhealthy practices," it notes. With tobacco-driven disease rising fastest among the poorest households — the same households covered by Ayushman Bharat — the costs fall increasingly on the state. Tobacco products generated just 2.4 percent of gross tax revenue in 2022–23.

A 2026 study published in an international tobacco research journal by Bose, Singh and colleagues quantified what cessation could mean in the other direction. Analyzing the same household survey data, the study found that 20.49 million Indian households could move to a higher economic class if tobacco expenditure were redirected toward food,

education or savings. Among the poorest rural households, tobacco currently consumes 6.6 percent of monthly income.

The paper found that rural households demonstrate 60 percent higher economic mobility potential from cessation than urban ones — a figure that, in Madhya Pradesh, where gutkha consumption has penetrated nearly every income group, carries particular weight.

What the Spending Data Reveals

The EAC-PM paper includes a finding that cuts through the policy language more sharply than any statistic about incidence rates. In rural India, households in the bottom 40 percent spend 4 percent of their monthly per capita consumption on pan, tobacco and intoxicants. They spend 2.5 percent on education.

The paper calls this what it is, "A welfare state cannot credibly champion human capital development while allowing addictive products to crowd out spending on education, nutrition and health."

In Madhya Pradesh, where gutkha consumption has risen from 4.2 percent of rural households to 62.3 percent in a single decade, where nearly half of urban households now consume a product their state government banned, and where 58.6 percent of the poorest rural households are regular users, that sentence is not an abstraction.

Madhya Pradesh banned gutkha in 2012. Today, 62.3 percent of its rural households consume it. No other large state in India comes close.

The figures come from a February 2026 working paper by Dr. Shamika Ravi, a member of the Economic Advisory Council to the Prime Minister, and Partha Protim Barman, a young professional at the council. They drew on India's Household Consumption Expenditure Survey for 2023–24, compared against the National Sample Survey of 2011–12.

India's Tobacco Surge

The state's crisis sits atop a national one.

Between 2011–12 and 2023–24, the number of rural households consuming any form of tobacco rose from 9.9 crore to 13.3 crore — a 33 percent increase in just over a decade. Urban India saw a steeper climb: tobacco-consuming households jumped 59 percent, from 2.8 crore to 4.7 crore.

Bidi — the traditional hand-rolled product — is declining. Packaged and branded products are surging in its place. Gutkha drove the sharpest national rise. The share of rural households consuming it increased 565 percent — from 5.3 percent in 2011–12 to 30.4 percent in 2023–24. In cities, the rise was 544 percent. Cigarette consumption climbed 171 percent in rural areas and 156 percent in urban ones.

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Madhya Pradesh Leads the Country

In rural Madhya Pradesh, gutkha consumption rose from 4.2 percent of households in 2011–12 to 62.3 percent in 2023–24. In urban areas, it climbed from 2.78 percent to 48.03 percent — again, the highest among large states. Nearly half of all urban households now consume a product their own government banned.

Overall tobacco use reached 89 percent of rural households by 2023–24 — the highest of any large state. Only smaller northeastern states — Tripura, Arunachal Pradesh, and Mizoram — rank higher nationally.

The burden falls hardest on the poor. Among the poorest 40 percent of rural households in Madhya Pradesh, 58.6 percent consume gutkha. Across Madhya Pradesh, Uttar Pradesh, and Bihar combined, more than 85 percent of bottom-40 households consume tobacco in some form.

Cigarettes have surged alongside gutkha. Urban Madhya Pradesh recorded a 312 percent increase in cigarette-consuming households — from 6.39 percent to 23.04 percent. In rural areas, the share rose from 1.43 percent to 9.7 percent.

What Gutkha Does

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The Ban That Failed

Madhya Pradesh was the first Indian state to ban gutkha, acting under the Food Safety and Standards Act on March 31, 2012. What followed was a workaround, not compliance.

Manufacturers split the product into two legally separate items — pan masala and loose tobacco — sold in coordinated pouches designed to be combined by the buyer. The EAC-PM paper calls it the "twin sachet" method.

"The twin-product strategy — selling pan masala and tobacco separately to circumvent bans — has hollowed out enforcement," Dr. Ravi and Barman wrote.

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The Fiscal Trap

The government's Ayushman Bharat scheme provides up to five lakh rupees per family per year in health coverage. It covers more than 12 crore families — concentrated among the bottom 40 percent of earners, the same households with the highest tobacco use.

Government health expenditure as a share of total spending rose from 29 percent to 48 percent between 2015 and 2022. The EAC-PM paper identifies a structural risk in that shift.

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A 2026 study by Montu Bose, Prashant Kumar Singh, and colleagues used the same household data to estimate what quitting would deliver. Among the poorest rural households, tobacco currently consumes 6.6 percent of monthly income. If that spending shifted toward food, education, or savings, 20.49 million Indian households could move to a higher economic class. Rural households showed 60 percent higher economic mobility potential from cessation than urban ones.

What the Budgets Reveal

In rural India, households in the bottom 40 percent spend 4 percent of their monthly per capita consumption on pan, tobacco, and intoxicants. They spend 2.5 percent on education.

"A welfare state cannot credibly champion human capital development while allowing addictive products to crowd out spending on education, nutrition and health," Dr. Ravi and Barman wrote.

Madhya Pradesh banned gutkha in 2012. It is now the state most thoroughly consumed by it.

Gunny Bag Shortage is Delaying Wheat Procurement, Madhya Pradesh Farmers Paying the Cost

Thousands of wheat farmers across Madhya Pradesh sit with their harvested crop in open fields. Wheat procurement at the Minimum Support Price, which was first scheduled to begin on March 16, then moved to April 1, has now been delayed a third time, to April 10 for four divisions and April 15 for the remaining six, according to a revised Standard Operating Procedure issued by the Food and Civil Supplies Department.

With government procurement yet to begin, farmers have been forced into open mandis where they are offered as low as ₹2,100 per quintal, according to arrival data from Bhopal's Karond Mandi, citing media reports.

[Stronger Nutgraf]

The delay comes down to one gap. The state did not arrange enough gunny bags before the procurement season. Without bags, agencies cannot lift or store wheat. That pushed procurement dates again and again. Farmers had to keep their crop in the open or take it to mandis without a government buyer. When hailstorms hit, the exposed crop was damaged. At the same time, traders stepped in and offered prices below MSP.

And, the unseasonal hailstorms, across more than a dozen districts in the past week have left the crops vulnerable. The gunny bag crisis, three postponed start dates and unseasonal storms recorded by IMD arrived together.

Delayed procurement left crops in the field

On April 4, a Western Disturbance triggered severe hailstorms across several districts of Madhya Pradesh. Gwalior was hit hardest, and two rounds of hailstorms struck within minutes of each other in the afternoon. The IMD recorded hailstones of 2.5 cm in diameter between 3:50 pm and 4:05 pm, breaking a 50-year weather record for the region.

Ramlakshan Meena, a farmer from Rameshwar village in Sheopur district, had sown wheat across 45 bigha jointly with his brothers. He has spent roughly ₹10,000 to ₹15,000 per acre. The hailstorm on the afternoon of April 4 destroyed nearly everything, he said.

Deepak Meena of Sheopurs Behrawada village said, “Both seasons this year have been a loss. Everything [five-acre wheat crop] we had put in is

gone," Deepak said. The cost of cultivation had been ₹10,000 to ₹15,000 per acre.

Deepak recently completed a BSc in agriculture and was planning to pursue an MSc. He said he had been counting on the harvest to pay electricity bills, his children's school fees, and other household expenses. The losses have now put even his education plans in doubt.

As per IMD, hail struck 12 districts, including Ujjain, Shajapur, Rajgarh, and Sehore, all major wheat-producing areas, while rain was recorded in 41 districts across the state. In Betul's Multai tehsil, standing crops flattened. In Barwani, moisture levels in harvested wheat raised fears of spoilage, farmers and agriculture officials in the district reported.

How the Delay Made It Worse

"Had procurement started on time, we would have cut the crop and taken it to the weighing centre. But there was no buyer. The crop was still in the field when the storm hit. Now the combine runs, but nothing comes out — just flat, empty stalks. The loss is 100 percent," Ramlakhan said.

The leader of the Opposition, Umang Singhar, in a letter to CM Mohan Yadav, said continuous delays had forced farmers to sell below the MSP. He noted that around 64.17 lakh Kisan Credit Card accounts are active in the state, carrying outstanding loans of nearly ₹86,995 crore, citing data presented by the Union Finance Ministry in the Lok Sabha.

Lakshminarayan Patel, president of the Bharatiya Kisan Sangh's Malwa Province, rejected the government's explanation that the West Asia conflict caused the bag shortage. **The shortage comes from a supply gap in packaging bags, hit by raw material disruptions and delays in procurement planning.** "The government is making false claims. Meanwhile, traders are taking advantage and buying wheat below MSP," Patel said.

The state pegs wheat procurement at 7.8 million MT this year. It says 312,000 bales of gunny bags will meet the requirement.

Ramlakhan said the harvest was supposed to help him repay loans and cover household expenses. He carries a debt of around ₹14 to 15 lakh, including government loans, tractor loans, and other dues. "We hoped that this harvest would help us recover. Now nothing is left. We are sitting on the road wondering what to do," he said.

Why Delay and What Caused It

The shortage of gunny bags, the jute and polymer sacks used to pack procured grain, is what the Food and Civil Supplies Department Minister cited as the reason for pushing back the start date.

Food and Civil Supplies Minister Govind Singh Rajput said in an interview with Dainik Baskhar that the government had sourced an additional 50,000 jute bales from the Centre and got permission to use HDPE, PP, and single-use jute bags as alternatives.

"Despite challenges posed by global circumstances and the conflict in West Asia, the government, keeping the best interests of the farmers in mind, has set a procurement target of 7.8 million metric tonnes of wheat," Rajput said.

The opposition rejected that explanation. Congress state president Jitu Patwari, at a press conference in Bhopal, said while 100 million gunny bags were needed for 2026, the state government had ordered only 26 million, a shortfall of nearly 75 million bags.

"This shortage is not due to war or any external factor but is a direct result of the government's inaction and negligence," Patwari said.

Anil Singh, State Spokesperson, Bhartiya Kisan Union (Tikait) said, "The government receives sowing data well in advance — they know how much wheat is coming. Gunny bags should have been stocked months ago. The silo bag system we had earlier eliminated this dependency. States like Punjab and Haryana still use it. Madhya Pradesh abandoned it without reason and is now paying the price."

National Picture

This is not a Madhya Pradesh problem alone. The same crisis is playing out across India's wheat belt. According to an assessment by the Punjab Arthiya Association, Punjab needed 260 million gunny bags this season and was short by 50 million as of late March, even after the Centre had already released ₹33,000 crore to the state for procurement.

In Haryana, Rajnish Chaudhary, president of the Karnal Arhtiyas' Association, told The Tribune that not a single gunny bag had been delivered to any grain market in the district when procurement was supposed to begin on April 1, and transporters and labour contractors had not been finalised either.

Chief Minister Mohan Yadav, in an official statement following two review meetings on Sunday, announced that small farmers will be given priority, their wheat will be purchased first, before medium and large farmers.

He directed officials to set up a state-level control room, inspect all weighing centres before April 10, and ensure drinking water, shade, seating, and fast payments at all procurement centres. Slot booking for registered farmers in the first four divisions opens from April 7.

Farmers are now demanding compensation and further relief from the government. "Our only demand from the government is compensation. Whatever loan instalments are due, give us five to six months of relief. Waive the interest at least," Ramlakhan said.

Deputy Director of Agriculture GK Pachauria stated that farmers affected by rain and hailstorms can register their complaints within 72 hours on the AIC Insurance Company Bhopal toll-free number 14447. The Agriculture Department has also issued numbers for insurance company representatives at the tehsil level.

For farmers in Sheopur, Gwalior, and the surrounding Chambal belt who are still tallying their losses.

मध्यप्रदेश के इंदौर, उज्जैन, भोपाल और नर्मदापुरम संभाग में 10 अप्रैल से एमएसपी पर गेहूं उपार्जन शुरु हो गया, बचे हुए संभागों में 15 अप्रैल से किसान अपनी फसल सरकार को बेच पाएंगे। यह पहली बार है जब राज्य में गेहूं की खरीद इतनी देरी से हो रही है, आमतौर पर मध्य मार्च से राज्य में खरीद शुरु हो जाया करती थी। देरी से शुरु हुए उपार्जन ने एमएसपी पर अपनी फसल बेचने की राह देख रहे कई किसानों को प्रभावित किया है।

इस वर्ष मोहन यादव सरकार ने गेहूं उपार्जन की तारीख 1 अप्रैल घोषित की थी लेकिन इसे आगे बढ़ाकर 10 अप्रैल कर दिया गया। सरकार ने तारीख आगे बढ़ाने के पीछे तर्क दिया ईरान युद्ध की वजह से बारदान की कमी।

किसान उपार्जन केंद्रों पर अपनी फसल ट्रॉलियों में भरकर लाते हैं, तुलाई होने के बाद इन्हें बारदान में पैक कर स्टोर किया जाता है। भारत में अमूमन दो तरह के बारदान इस्तेमाल होते हैं, पहला जूट का बना बोरा दूसरा हाई डेंसिटी पॉलीइथलीन (HDPE) बारदान। एचडीपीई बैग्स का निर्माण पेट्रोकैमिकल इंडस्ट्री पर निर्भर होता है जो ईरान युद्द की वजह से प्रभावित है।

फूड एंड सिविल सप्लाईज़ एडिशनल चीफ सेक्रेटरी द्वारा 5 अप्रैल को दी गई जानकारी के मुताबिक प्रदेश में 78 लाख मीट्रिक टन गेहूं का उपार्जन होना अनुमानित है। इसके लिए 3 लाख 12 हजार गठान बारदानों की आवश्यकता होगी। उन्होंने बताया कि "प्रदेश में गेहूं खरीदी आरंभ करने के लिए आवश्यक बारदान का पर्याप्त स्टॉक उपलब्ध है। हालांकि एमपी सिविल सप्लाईज़ कॉर्पोरेशन लिमिटेड के पास अप्रैल के पहले हफ्ते तक 1 लाख 20 हज़ार जूट के बैग की इंवेंटरी उपलब्ध थी, जो ज़रुरत का सिर्फ एक तिहाई है।

एमपी स्टेट सिविल सप्लाईज़ कॉर्पोरेशन के मैनेजिंग डायरेक्टर अनुराग वर्मा कहते हैं कि "हम अतिरिक्त जूट एवं एचडीपीई बैग्स एक्वायर करने की प्रक्रिया में हैं। हमने नए और यूज्ड बैग्स के लिए टेंडर जारी कर दिये हैं।

मुख्यमंत्री डॉ.यादव ने रविवार 5 अप्रैल को कहा कि केन्द्र सरकार, जूट कमिश्नर सहित अन्य बारदान प्रदाय एजेंसियों से बारदान आपूर्ति के लिए राज्य सरकार लगातार सम्पर्क बनाए हुए है।

सरकार बारदान उपलब्धता पर आश्वासत करती नज़र आ रही है लेकिन ज़मीनी हालात कहते हैं कि सरकार को बारदान आपूर्ती तेज़ करने की ज़रुरत है।

सीहोर जिले के इच्छावर में मां भवानी गेहूं उपार्जन केंद्र के संचालक अभिषेक यादव ने ग्राउंड रिपोर्ट को बताया कि उन्हें हर वर्ष जूट के बारदान सरकार की ओर से उपलब्ध करवाए जाते हैं लेकिन इस बार पीई बैग्स भेजे गए हैं, वह भी इतने हैं जिससे 2 हफ्ते का ही काम चलेगा। तुलाई दो महीने चलेगी ऐसे में अतिरिक्त बैग्स की ज़रुरत होगी। अभीषेक प्लास्टिक के बारदान की कमियां भी बताते हैं वो कहते हैं कि "जूट के बने बैग्स में अनाज खराब नहीं होता क्योंकि इसमें हवा लगती रहती है और इसका स्टैक बनाना आसान होता है, वहीं प्लास्टिक बैग्स में ऐसा नहीं किया जा सकता।"

देवास जिले के कन्नौद में गेहूं उपार्जन केंद्र संचालक विपुल कहते हैं कि उन्हें बारदान की 30 गठान मिली हैं, एक गठान में 500 बैग्स होते हैं। एक दिन में उन्हें 10 गठान की ज़रुरत है। ऐसे में केवल तीन दिन की ही तुलाई संभव है। विपुल कहते हैं "बारदान नहीं मिला तो तुलाई रोकनी पड़ जाएगी।"

देरी से गेहूं उपार्जन शुरु होने और बारदान की कमी पर विपक्ष भी सरकार पर हावी है। मध्य प्रदेश कॉंग्रेस अध्यक्ष जीतू पटवारी ने सोशल मीडिया प्लैटफॉर्म एक्स पर

कहा कि मध्य प्रदेश में पहले ही भाजपा सरकार ने गेहूं की खरीद इतनी देर से शुरू की, उसके बाद भी आज खरीद के पहले दिन सर्वर डाउन है। कई समर्थन खरीद केंद्रों पर ताले लगे हैं, जिसके चलते कई किसान भाई अपना गेहूं नहीं बेच पा रहे हैं। पहले बारदाने का ढोंग, और अब तकनीकी जालसाजी। आज सरकार की नीति और नियत के चलते सभी किसान भाइयों को 400 से 500 रुपये प्रति क्विंटल के नुकसान पर गेहूं बेचना पड़ रहा है।

देरी से शुरु हुई खरीदी का किसानों पर असर

2026-27 में गेहूं उपार्जन के लिए प्रदेश के 19 लाख 4 हजार 644 किसानों ने अपना पंजीयन कराया है। इस उपार्जन वर्ष के लिए गेहूं का न्यूनतम समर्थन मूल्य 2,625 रूपए प्रति क्विंटल तय किया गया है। राज्य सरकार न्यूनतम समर्थन मूल्य के अतिरिक्त 40 रूपए प्रति क्विंटल बोनस का लाभ भी इस वर्ष किसानों को देने जा रही है। लेकिन देरी से शुरु हुई बुवाई के चलते कई किसानों को अपनी फसल मंडी में निजी व्यापारियों को बेचनी पड़ रही है। कुछ किसानों ने पैसों की तत्काल ज़रुरत और कुछ छोटे किसानों ने भंडारण की व्यवस्था न होने की वजह से ऐसा किया है।

सीहोर जिले के मुंगावली गांव के किसान बलराम पाटीदार कहते हैं कि "डीज़ल, बिजली, मज़दूर और हार्वेस्टर का बिल चुकाने के लिए पैसों की ज़रुरत थी। अब यह पैसा तो फसल बेचकर ही मिल सकता था। ऐसे में हमने कुल 25 क्विंटल उपज में से 14 क्विंटल फसल 2000 रुपए प्रति क्विंटल के भाव से मंडी में बेच दी।"

बलराम कहते हैं कि सरकारी खरीद अगर समय से शुरु होती तो हम एमएसपी पर फसल बेचते और प्रति क्विंटल 600 रुपए अतिरिक्त मिल जाते।

सीहोर जिले की आष्टा तहसील के किसान नीलेश जैन बताते हैं कि उन्होंने 20 मार्च को ही अपनी गेहूं की फसल कटवा ली थी। सरकारी खरीद शुरु न होने की वजह से उन्होंने फसल काटकर अपने घर के बाहर खुले में ढेर लगा कर रख दिया था। 30 मार्च को आई बारिश और आंधी से अपनी फसल को बचाने के लिए उन्हें बहुत मश्क्कत करनी पड़ी। वो कहते हैं कि अगर बारिश अधिक होती तो फसल पूरी खराब हो सकती थी। नीलेश कहते हैं कि "छोटे किसानों के पास लंबे समय तक फसल का भंडारण करने की व्यवस्था नहीं होती। इसीलिए समय पर सरकारी खरीद होना ज़रुरी है।"

जहां किसान एक तरफ अलग अलग चुनौतियों का सामना कर रहे हैं तो वहीं सरकार कह रही है कि वह हर घड़ी किसानों के साथ खड़ी है। मुख्यमंत्री डॉ. यादव

ने कहा कि एमएसपी पर पहले छोटे किसानों का गेहूं खरीदने का फैसला किया गया है इसके बाद मध्यम एवं बड़े किसानों से खरीदी होगी। सरकार इसे उपाय बता रही है कि लेकिन यह संकेत भी दे रही है कि यह गेहूं प्रोक्योर्मेंट सीज़न सरकार के लिए आसान नहीं रहने वाला है।

Black Spots, Big Spending, Daily Deaths: Why Madhya Pradesh's Highways Keep Killing

After sunset, the stretch at Gyarah Meel on Hoshangabad Road in Bhopal goes completely dark. Seven people have died here in 10 road accidents over the past three years. Street lights either don't work or malfunction. Vehicles approaching from Mandideep arrive at high speed with no warning systems, no rumble strips, no reflective markers.

Traffic police identified the location as a black spot, a term used for accident sites that have recorded multiple deaths over three years. They suggested a road divider, speed breakers, and signage to separate the highway and service road. None were implemented.

In March 2025, a 45-year-old woman was killed near Gyarah Meel. A car hit her, then another vehicle ran over her body. Gyarah Meel ranks as the second deadliest spot in the city.

Bhopal's death toll, money that vanished

Between January and August 2025, the Misrod police station area, which houses Gyarah Meel, recorded the highest number of road accident fatalities in Bhopal. Twenty-one people lost their lives in 114 road accidents within Misrod limits over these eight months. Seventy-five others were injured.

Koh-e-Fiza followed closely, recording 16 fatalities and 102 injuries in 132 accidents, according to Bhopal traffic police. The Kolar police station area ranked third with 15 deaths in 100 accidents and 93 more injured, police data showed.

Bhopal traffic police identified 16 accident-prone black spots across the city based on a three-year analysis of road accident data from 2022 to 2024. Those 16 locations produced 99 accidents and 27 deaths between 2022 and 2024.

Between March and May 2023, these locations received ₹3.98 crore for safety improvements, as per the report of Dainak Baskhar. The Bhopal Municipal Corporation spent ₹5.30 lakh, enough to audit two locations.

In 2023, 196 people died at identified black spots across Bhopal. The total citywide death toll that year reached 457. In 2025, nearly 3,000 road crashes killed at least 215 people.

The National Crime Records Bureau reports nearly 3,000 road accidents every year in Bhopal. Statewide, road accident deaths have risen steadily. From 10,706 deaths in 2018, the toll climbed to 14,076 in 2024, a 31 percent increase over seven years. In 2024 alone, deaths rose 2 percent from the previous year.

A Supreme Court road safety committee visited Bhopal in August 2025. Chairman of the committee and former Supreme Court judge Abhay Manohar Sapre inspected eight black spots. At each location, he questioned officials about deaths and why accidents persist despite road markings and speed breakers.

"If everything is being done properly, why are deaths occurring in accidents?" Sapre asked.

Six months later, most of the money remains unspent. Despite repeated recommendations for corrective action on engineering defects, suggestions remain unimplemented. Only temporary fixes were applied at a few locations while the root causes remain unaddressed.

Dr. Siddhartha Rokde, assistant professor and consultant in traffic and transportation engineering at the Maulana Azad National Institute of Technology in Bhopal, echoed Sapre's concerns. "Black spots persist due to lack of willpower," Rokde told Ground Report. "Accidents at black spots are not caused only by speeding. Poor road construction is also a major reason."

Same Problem Across State

The highest number of 47 major fatal black spots have been found on the roads of Jabalpur, the home district of Public Works Minister Rakesh Singh. The department has repaired 10 of them. Work is ongoing to repair the remaining ones.

Indore recorded 16 black spots that killed 114 people between 2023 and 2025, with the toll rising annually.

The Ministry of Road Transport and Highways has identified 25 black spots across Madhya Pradesh on national highways. These locations killed 305 people.

In June 2024, nine members of a family returning from a wedding were killed in Jhabua's Meghanagar area. A cement truck lost balance on a temporary road near an under-construction rail overbridge and fell on their van, according to Jhabua SP Padmavilochan Shukla.

Madhya Pradesh records an average of 33 road accidents every day on its national highways. Between 10 and 11 people die in those crashes. From 2021 through 2025, the state logged 61,176 accidents on national highways, killing 19,416 people.

Nobody owns the problem

Part of the problem is fragmented responsibility. A BMC official who works on black spot remediation and requested anonymity, said there are three to four road agencies in Bhopal, PWD, CPA, BMC, NH, and MP RDC. Whoever owns the road is doing the rectification work.

The official told Ground Report, “BMC controls only two of Bhopal's 16 to 17 black spots. The multi-agency structure creates accountability gaps”.

"We just received the full SPA report two months ago. We sent it to the UID for verification and in parallel, we prepared the tender and floated it. Work will start within 10 to 15 days," the official said.

An engineer at Bhopal Municipal Corporation, who requested anonymity, told Ground Report that a comprehensive action plan has been developed. "The Municipal Corporation has prepared an action plan and sent it to the government for approval. Its approval is awaited," the official said.

Additional DCP (Traffic) Basant Kaul stated that rising accident numbers highlight the need for tighter coordination among police, the Public Works Department, and Bhopal Municipal Corporation, according to Times of India.

Rokde disagreed that the problem is one of coordination alone. He emphasized that engineering solutions exist but require proper implementation. "Can we have proper road markings? Can we do the pruning

of trees so that whatever overgrown growth is there which is hindering the line of sight or visibility can be taken care of? Can we have rumble strips as per the standards which are suggested to us with proper markings?" Rokde said.

Zone-4 leads the carnage

Zone-4 of the Bhopal Police Commissionerate saw the highest casualties between January and August 2025, logging 60 deaths and 372 injuries in 479 road accidents, according to traffic police data. Zone-2 reported 47 deaths and 480 injuries in 667 accidents, the data showed. Zone-1 saw 24 fatalities and 379 injuries in 461 accidents. Zone-3 recorded 26 deaths and 242 injuries in 319 accidents, according to the data.

Rokde pointed to visibility as a critical nighttime factor. "We need to address the nighttime facility. Can we have certain flashing beacons in the night time? Can we identify the dark spots where the visibility is less?" Rokde said. "If I cannot see an object, I don't know whether the object is there or not. Only I'll understand when I'll come too close to an object and I'll not be able to stop my vehicle."

A 2024 study titled “Analysing Road Accident Trends and Contributing Factors on Highways in Madhya Pradesh“ found that speeding is the leading cause of road accidents in the state. It accounted for 47% of accidents in 2023, up from 40% in 2010. Drunk driving and driver distractions, like mobile phone use, also rose steadily.

Engineering failures persist

Platinum Plaza Square on Atal Path was identified as the most dangerous urban black spot in Bhopal, based on official traffic police data. Eight people died there in 16 accidents over three years.

Despite this toll, only dysfunctional traffic signals were repaired. Proposed speed control measures remain pending. There are no cameras fitted at the square to monitor overspeeding, as suggested by traffic police.

Hoshangabad Road presents similar problems. In 2024, Bhopal removed the Bus Rapid Transit System corridor from Hoshangabad Road. The removal freed up significant road width. But many cut points were left in the road divider.

"The primary causes of accidents on Hoshangabad Road include the cut points on the road divider and the roads connecting residential colonies to the main highway," a traffic police spokesperson told Ground Report. "While the removal of the BRTS corridor significantly improved the situation, the widening of the road led to an increase in vehicle speeds."

Rokde supported the Traffic police's assessment about cut points and added that intersections require special attention. "In India, the right-turning movement is supposed to be the conflicting movement. Can we see to it that when a right turning movement is there, sufficient gaps are available?" Rokde said.

He also emphasized that work zones require strict adherence to guidelines. "Metro construction is going on in many cities. The whole work zone should be well lit and it should not be exposed to the traffic or the pedestrian movement," Rokde said.

During the same period, the ministry allocated ₹38,700 crore for highway projects in Madhya Pradesh. The daily spending averages ₹21 crore. Roughly ₹97 lakh spent for every life lost. The ₹3.98 crore allocated to Bhopal in March 2023 sits in Municipal Corporation files. The detailed project report remains unused since 2023. Every 2.4 hours, someone dies on a Madhya Pradesh highway.

Ground Report contacted Additional DCP (Traffic) Basant Kaul for further comment, but he did not respond to calls at the time of publication.

17 Victims Daily: How Stray Dogs Are Terrorizing Jammu and Kashmir

Arif heard growling behind him as he walked home from school one April afternoon in 2024. Before the 12-year-old could react, a pack of stray dogs surrounded him on the dirt path near his house in Gujjar Basti of Hariganiwan, a small village in central Kashmir's Ganderbal district.

The animals lunged at his legs and arms. Arif screamed and tried to run, but they chased him down. Neighbours rushed out with sticks, finally scaring the dogs away. But the pack had already inflicted multiple bites across his lower limbs. Blood soaked through his school uniform.

His brother Younus, 29, heard the commotion while working nearby. He found Arif bleeding on the ground. Younus rushed him to the nearest health center. Over the following weeks, Arif took five injections at the sub-district hospital in Kangan. Each trip required half a day's travel, and Younus had to take time off work, straining the family's already tight budget.

A Crisis in Numbers

Arif represents one of more than 206,000 people dogs bit in Jammu and Kashmir between 2024 and 2025. Health and Medical Education Minister Sakina Itoo presented these figures in the legislative assembly on Thursday, revealing a growing public health emergency.

Cases rose from 93,765 in 2024 to 112,695 in 2025, a 20 percent increase. Jammu division recorded 126,844 cases, while Kashmir valley reported 79,616 cases.

Jammu district accounted for 76,824 bites, nearly matching the entire Kashmir division's total. Srinagar recorded 25,149 cases. Ganderbal district, where Arif lives, reported 1,695 cases.

The Anti-Rabies Clinic at Shri Maharaja Hari Singh (SMHS) Hospital in Srinagar logged 6,258 dog bite cases between June 2024 and May 2025, averaging more than 17 cases daily.

"Every year, on average, four to five deaths occur in Kashmir due to dog bites, and stray dogs cause 98 percent of cases, with children often bearing the brunt," said Professor Shahzada Mohammad Salim Khan, head of the Community Medicine Department at Government Medical College Srinagar.

The Afternoon Danger Zone

A study at Srinagar's SMHS Hospital, published in PLOS Neglected Tropical Diseases, found that 47.7 percent of dog bites occur during afternoon hours when children return from school.

For Younus, this pattern now haunts him daily. "Every day around 2 PM, when schools close, I stop working and watch the path," he says. "I cannot focus. I keep thinking "what if it happens again?"

The family has changed their entire routine. Arif's younger siblings no longer walk to school alone. Younus or a neighbor now escorts them, adding an hour to already long workdays.

Now 16 years old and studying in class 10, Arif still carries physical and psychological scars. He avoids walking alone on village paths. "I still have nightmares," he admits.

Where Officials Fail

The minister said that there is no report indicating an increase in the population of stray dogs within the limits of the Jammu Municipal Corporation (JMC). “However, she said that the Srinagar Municipal Corporation (SMC) conducted a scientific population survey in 2023, which estimated nearly 64,416 stray dogs within its jurisdiction”, she said in Assembly.

A senior official from SMC, speaking to Ground Report on condition of anonymity, said the corporation has been working to address the crisis through sterilization and vaccination programs.

"Since 2018, we have sterilized 15,266 dogs," the official said. "We performed 6,964 sterilizations in 2023 and 7,546 in 2024."

However, the pace has slowed considerably. Between August and September 2025, only 935 sterilizations were carried out. When asked about detailed figures and program effectiveness, the official said, "Please file an RTI and you will get all the information which you want."

The crisis extends beyond urban centers. Villages like Hariganiwan face added risk due to limited medical access. “After what happened to Arif, school routes feel unsafe,” said Younus. “These paths have become danger zones for children.”

“One important factor that I believe is contributing to the increasing number of dog-bite cases in Kashmir is less human-dog interaction or lack of socialization," said Dr. Qazi Mudasir, a veterinarian at the Central Veterinary Hospital in Srinagar. "Kashmiris traditionally used to keep extra food, such as rotis for dogs outside their homes, but this trend has diminished to a large extent."

"When the population of dogs increases, the available resources may become limited. Stray dogs may become more aggressive with other animals or even people who approach them around food sources, potentially leading to dog bites in defense of their perceived territory or resources," he explained.

"Srinagar city and other parts of Kashmir generate hundreds of tons of waste daily, and leaving that garbage or food waste in open areas can attract stray dogs. They find a consistent food source and are more likely to reproduce and thrive, leading to larger numbers of strays," Dr. Mudasir added.

"If a dog has been mistreated, harmed or stoned by someone, it can associate that experience with humans in general and may perceive all humans as potential threats," he said.

As per the study, Lower limbs are the most common bite location, accounting for 71.7 percent of cases. Children under 15 face higher

risk of head and neck injuries. The study found that 57.6 percent of bites were Category III, involving broken skin and bleeding, while 42.3 percent were Category II, involving minor abrasions.

"If someone is bitten by a cat or dog, the first thing they should do is to wash the wound thoroughly with running tap water using antiseptic soap or detergent," advised Dr. Aqib Hussain Parray, Veterinary Assistant Surgeon posted at Frisal Kulgam. "Proper wound cleaning is critical before dressing the bite area to reduce the risk of infection or rabies."

How Authorities are Responding

The government is managing the dog population under the Prevention of Cruelty to Animals Act 1960, the Bhartiya Nyaya Sanhita, and Animal Birth Control Rules 2023. Srinagar Municipal Corporation has outsourced an Animal Birth Control and Anti-Rabies Vaccination program.

"The existing efforts are challenged by the high fertility rate of dogs," Minister Itoo's reply stated. "SMC is augmenting its capacity by establishing a third ABC-ARV centre at Ahal Chatterhama, which is expected to increase sterilisation and immunisation capacity."

The government follows Supreme Court directives permitting only sterilization, vaccination, and release of dogs back to their original habitat.

But for families like Arif's, the government's response feels inadequate. His father's irregular income as a seasonal worker means any medical emergency creates financial strain. The free vaccines help, but the cost of repeated hospital visits and lost workdays adds up.

Human Cost

Professor Khan emphasized the severity of the threat. "Rabies is 100 percent fatal once symptoms appear, but it is also completely preventable," he said. “Rabies is 100 percent fatal once symptoms

appear, but it is also completely preventable," he said. "Timely vaccination after a bite saves lives. Delay costs lives."

He explained that the virus takes time to travel from the bite site to the brain. "That window is the only chance. Once the central nervous system is affected, there is no cure."

"Children are disproportionately affected by dog bites, with 80 percent of dog-bite cases involving stray dogs," Dr. Khan said. "People should not ignore any bite or scratch incident and get vaccinated immediately. The number of cases coming to the ARC of SMHS has increased manifold in the last three years."

Dr. Khan's observations align with research findings. Studies show that between 30 and 60 percent of rabies cases and deaths in India occur in children under 15, according to the World Health Organization. Multiple peer-reviewed studies confirm that 74 to 82 percent of dog bite cases involve stray dogs, corroborating Dr. Khan's assessment.

For Arif and thousands of others across Jammu and Kashmir, the threat remains constant.

Ground Report has filed RTI requests with the Directorate of Health Services in Kashmir and Jammu divisions seeking comprehensive data on stray dog population trends and pre-COVID bite statistics to better understand the scope of this growing crisis across the region.

Prof Nasir asked that his name not be used as he is a government employee. He called on Sunday afternoon. He said he does not want to be quoted. He requested that his name not be mentioned.

Zero Duty, Full Dread: India-US Trade Deal Hits Kashmir's Farmers Hard

Irfan Rashid Bhat, an almond farmer from Kakapora in Pulwama, Jammu and Kashmir, follows the news daily to track weather alerts, market prices, and updates that could affect his crop. On February 7, the India-US interim trade framework had just been made public by Commerce Minister Piyush Goyal. Buried inside the text was a phrase: “zero duty on tree nuts entering India from the United States.”

“This one felt like someone had reached into my pocket,” Bhat, a 42-year-old farmer, told Ground Report.

J&K produces 91 percent of India's total almond output, according to the National Horticulture Board. Walnuts are even more concentrated. The Union Territory accounts for 98 percent of India's walnut production, **with output touching 3.07 lakh metric tonnes in 2024, a record high, before slipping to 2.80 lakh metric tonnes in 2025,** as per data from India's Department of Agriculture and Farmers Welfare.

Forty kilometres away, in the Lar area of Ganderbal district, Abdul Majid was spread out on his courtyard drying the season's last grapes when his brother called. Majid, 50, in addition to growing grapes; he processes them into dry varieties which are then sold across north India.

"My entire income is from dry fruit," he told Ground Report. "If American raisins land here at zero duty, the trader will buy those. Not mine."

Under the India-US interim trade framework, India agreed to eliminate or reduce tariffs on American agricultural goods, including tree nuts, fresh and processed fruit, dried distillers' grains, and soybean oil. The US will retain an 18 percent tariff rate on Indian exports.

Horticulture is the backbone of J&K's economy, contributing 8 to 9 percent of the State's GDP and providing livelihoods for 33-35 lakh people. The sector generates nearly Rs 10,000 crore annually. Fruit

exports reached 8.70 lakh metric tonnes between April and November 2025, earning Rs 3,809.97 crore. Almond and walnut exports contributed Rs 602.53 crore in 2024-25, according to The Economic Survey Report 2025-26.

In Ganderbal town, apple grower Ghulam Rasool Rather, 58, put the fear in starker terms. He survived the catastrophic August 2025 floods that devastated orchards across the Valley, pushing many growers to the brink — and rebuilt. "The flood took the apples off the trees," Rather said. "This deal will take the trees."

"Horticulture is not just a crop here. It is the economy," Prof Nisar Ali, economist at the University of Kashmir, said. "When you remove the tariff protection entirely, you are removing the only equaliser these farmers had against one of the most subsidised agricultural systems (United States) in the world."

What the Deal Says

India produces **only 4,150 metric tonnes of almonds annually on a shelled basis while importing 1,80,000 to 1,90,000 metric tonnes to meet demand. Walnut imports are forecast to hit 70,000 metric tonnes** in 2024-25, a 17 percent jump from the previous year, according to the USDA Foreign Agricultural Service.

With zero duty, US produce enters at a price advantage that local farmers, carrying costs of terrain, labour, and long transport routes, cannot match.

India has also stated it "intends" to purchase $500 billion of US goods over five years, $100 billion annually, more than double its current total US imports, as per the India–US Joint Statement released by the White House.

Growers Speak, Union Acts

Bashir Ahmad Basheer, Chairman of the Kashmir Valley Fruit Growers-cum-Dealers Union, wrote to Prime Minister Modi on February 7, urging him to impose an import duty of "over and above 100 per cent" on American and European apples. His union represents over seven lakh farming families.

"The cumulative impact of imports will damage local growers, particularly small and marginal farmers struggling with input costs, erratic weather, pest attacks, and transport issues," Basheer told Ground Report. "The reduction in customs duty on American apples will make imported apples cheaper, and a trader naturally prefers them over Kashmiri apples."

US orchards yield 40 to 70 tonnes per hectare. Kashmir's yield is 7 to 8 tonnes, primarily due to geography, mechanisation, and state subsidies.

Tariq Ramzan, an agriculture expert based in Kashmir, said, "Local farmers cannot match the subsidies, technology, and scale that American growers have. Once the market tilts, it does not tilt back," he told Ground Report.

Majid in Ganderbal made the same connection from the dry fruit side. "The imported walnuts already sell at Rs 400-500 per kilogram. Ours go for Rs 300-350. After zero duty, the price gap will narrow. No one will look at our produce."

Evidence From History

When India imposed a retaliatory 20 percent additional duty on US apples in 2019, American imports dropped — from 1,27,908 tonnes in 2018-19 to just 4,486 tonnes by 2022-23, according to Commerce Ministry data. During those four years, Kashmir's farmers recovered market share, and prices stabilised. When the duty was removed in 2023, US imports climbed again.

Most US trade partners waited for a Supreme Court ruling on Trump's tariffs before committing to any deal. India did not.

The urgency is hard to explain against the trade data. India's overall merchandise exports in April–December 2025 grew 2.44 percent over the same period the previous year, despite Trump's tariffs, according to Commerce Ministry data.

India gave zero duty on US apples and tree nuts. The US gave India 18 percent, still more than six times the original tariff level before retaliatory measures. Prof Nisar Ali called this the central problem. "India conceded the entire protection of its most vulnerable crops. The US conceded almost nothing that it had not already taken," he said.

Basheer made the same point from the market floor. "A trader is a businessman. He will buy what costs him less," he said. "With zero duty, the American apple costs less. Our apple, grown on steeper slopes, carried on mules, transported without refrigeration, will sit in the mandi unsold."

India's annual apple market runs to 30-35 lakh tonnes. Basheer expects US imports to claim a growing share starting in March 2026.

Government Position

Lt Governor of Jammu and Kashmir, Manoj Sinha, at an Agriculture Summit by SKUAST (Sher-e-Kashmir University of Agricultural Sciences and Technology) on February 12, said misinformation was circulating about the deal. "The Government of India is implementing robust safeguards to ensure farmers and their production remain unharmed," he said.

Chief Minister Omar Abdullah was not reassured. In the J&K Legislative Assembly, he called it a "sellout."

"We rely on dry fruits, almonds, saffron, apples, and kiwis," Abdullah said. "If these products come duty-free from America, Jammu and Kashmir will definitely suffer."

Tariq Ghani, President of the Kashmir Chamber of Commerce and Industry, agreed. "If imported apples are cheaper, it will be detrimental to Kashmir," he told Ground Report.

Farmers in Himachal Pradesh and Uttarakhand have raised similar alarms, with 30-35 lakh unsold Himachal apple boxes still in cold storage.

Arithmetic of Disadvantage

Irfan Rashid Bhat is clear about the math. He pays for irrigation, labour, transport, and pest control with almost no state support. "We just need a fair fight," Bhat said. "This deal does not give us that."

Abdul Majid said the supply chain gap compounds it: no cold storage, no refrigerated transport, no crop insurance. "Whatever I lose, I absorb alone," he said.

Ghulam Rasool Rather, still rebuilding after the 2025 floods that cost Valley growers an estimated Rs 2,000 crore, closed it simply.

"Kashmir has no industry to fall back on. We are the orchard. If the orchard goes, we go."

Prof Nisar Ali said the data backed Rather's conclusion. Horticulture contributes 8 to 9 percent of J&K's State Gross Domestic Product and is the largest source of private employment in the Union Territory. "There is no buffer here," Ali said. "When the orchard suffers, the entire economy suffers."