

## Necessary Steps

Illegal mining has long plagued many resource-rich nations, undermining environmental sustainability, public safety, and economic stability. The recent intensification of government efforts to curb these unlawful activities marks a crucial turning point in protecting both natural resources and human life. While mining remains an essential driver of industrial growth, unregulated operations present severe consequences that cannot be ignored.

The environmental toll of illegal mining is immense. Forests are cleared indiscriminately, rivers are diverted, and soil erosion becomes rampant. Toxic substances, including mercury and cyanide, are often used to extract minerals without proper containment, contaminating water sources and posing serious health hazards to local communities. Beyond environmental degradation, illegal mining accelerates biodiversity loss, threatening countless species that depend on fragile ecosystems. In countries where enforcement has historically been lax, illegal mines have transformed once-thriving landscapes into wastelands, demonstrating the urgent need for robust intervention.

Public safety is another critical concern. Illegal mining operations are often carried out in hazardous conditions without adherence to safety protocols. Collapses, landslides, and exposure to poisonous chemicals have led to numerous fatalities. The lack of oversight means that not only miners but also surrounding communities face heightened risks. Crackdowns, therefore, are not merely about legal compliance—they are fundamentally about safeguarding human lives.

Economically, illegal mining undermines legitimate businesses and deprives governments of essential revenue. Unlicensed operations evade taxes and royalties, limiting the resources available for infrastructure, healthcare, and education. Meanwhile, law-abiding miners face unfair competition, discouraging investment in regulated, safer practices. By enforcing mining laws, governments can ensure that mineral wealth contributes to national development rather than enriching a few illicit operators.

The crackdown on illegal mining also aligns with global efforts to promote sustainable development. The United Nations' Sustainable Development Goals emphasize responsible consumption and production, environmental conservation, and the eradication of poverty. When governments act decisively against unlawful mining, they not only protect ecosystems but also create avenues for sustainable employment. Transitioning miners from illegal operations to formalized, regulated workforces ensures income security while upholding environmental standards.

However, enforcement alone is not sufficient. Policymakers must pair crackdowns with community engagement, education, and alternative livelihood programs. Many individuals turn to illegal mining due to poverty, lack of opportunity, or limited awareness of legal pathways. Providing skill development, access to microfinance, and community-based monitoring initiatives can reduce the lure of illicit mining. Partnerships with local organizations and civil society can further enhance compliance while fostering trust between authorities and affected populations.

Technology can play a pivotal role in this battle. Satellite imagery, drones, and data analytics enable authorities to monitor mining activities in real-time, identify illegal operations, and respond swiftly. Coupled with transparent reporting mechanisms and strict penalties for offenders, these measures can significantly curb illegal mining.

The recent crackdown represents a commitment to balancing economic growth with environmental stewardship and social responsibility. While challenges remain, the decisive enforcement of mining laws sends a clear message: natural resources are a shared heritage, and their exploitation must benefit society at large, not a few unscrupulous individuals.

The fight against illegal mining is both a moral and practical imperative. Protecting the environment, ensuring public safety, and securing government revenue are interlinked goals that require sustained vigilance. By combining law enforcement with community engagement, technological monitoring, and sustainable development strategies, nations can turn the tide against illegal mining and pave the way for a future in which natural wealth serves as a foundation for equitable and lasting progress.

■ MOHAMMAD HANIEF



Jammu and Kashmir is witnessing a defining moment in its tourism journey. A record-breaking winter tourist rush, followed seamlessly by the onset of spring marked by blooming tulips and almond blossoms, is transforming the region's seasonal narrative. What was once perceived largely as a summer retreat has evolved into a vibrant, year-round destination. The remarkable winter momentum generated in snow-laden destinations like Gulmarg is now flowing naturally into the floral spectacle of spring at the Indira Gandhi Memorial Tulip Garden and Badamwari Garden—creating an unprecedented continuity in tourist inflow.

The winter season of 2025-26 marked a turning point. Heavy snowfall transformed the Valley into a snowbound paradise, drawing visitors in numbers that exceeded expectations. Airports recorded sustained arrivals, highways into the Valley witnessed steady vehicular movement, and hotels across major destinations operated at near full capacity. Gulmarg emerged as the epicenter of winter tourism, with skiing enthusiasts, honeymooners, and families thronging its slopes. Gondola rides functioned at maximum capacity, while local businesses—from ski instructors to café owners—extended operations to meet surging demand.

Unlike earlier years when winter tourism remained confined to niche adventure travelers, this season saw broad-based participation. Advance bookings, extended stays, and repeat visits signaled growing confidence in Kashmir's winter infrastructure. The economic ripple effect was immediate. Markets in Srinagar remained lively despite freezing temperatures. Traditional handicrafts, pashmina shawls, carpets, and papier-mâché products witnessed brisk sales. Houseboats on Dal Lake reported encouraging occupancy levels. Taxi operators, tour guides, and hospitality workers experienced sustained income during months previously considered off-peak.

The true significance of this winter surge lies not only in its scale but in its continuity. Rather than tapering off with the melting snow, tourist interest has smoothly transitioned into the Valley's spring calendar. As temperatures rise and snow retreats to higher altitudes, a different but equally captivating spectacle unfolds.

The reopening of the Indira Gandhi Memorial Tulip Garden each spring has become one of the most anticipated events in Kashmir's tourism calendar. Recognized as one of Asia's largest tulip gardens, it spreads across terraced slopes overlooking Dal Lake, framed by the Zabarwan hills. When millions of tulips bloom in coordinated hues of red, yellow, purple, and white, the landscape transforms into a vibrant tapestry. The tulip festival attracts thousands of visitors daily during peak bloom, turning Srinagar into a focal point of floral tourism.

The tulip garden represents more than horticultural excellence. It is a strategic intervention aimed at extending the tourist season

## Four Seasons, One Destination: Kashmir's Expanding Tourism Horizon



beyond summer. By positioning early spring as a major travel window, authorities have successfully reduced seasonal dependency and created a more balanced tourism cycle. For hoteliers and tour operators, the tulip bloom fills what was once a transitional lull between winter and peak summer travel.

Complementing this spectacle is Badamwari Garden, whose almond blossoms herald the arrival of spring with quiet elegance. Nestled near the old city, Badamwari carries deep cultural resonance. Long before large-scale tourism planning, the blooming almond trees symbolized renewal for local residents. Today, its reopening reconnects heritage with hospitality. Families, photographers, and visitors gather beneath delicate pink and white blossoms, reaffirming Kashmir's timeless bond with nature.

Together, the tulip garden and Badamwari represent dual pillars of spring tourism—modern infrastructure on one hand and historical continuity on the other. Their simultaneous bloom amplifies the Valley's appeal and ensures that the enthusiasm generated by winter snowfall seamlessly flows into the months ahead.

This seasonal diversification carries significant economic implications. Tourism remains one of Jammu and Kashmir's largest employment generators, directly and indirectly supporting thousands of families. The winter boom injected liquidity into local markets, enabling small enterprises to recover from lean periods. Now, the spring bloom ensures continuity of earnings. Rather than experiencing abrupt seasonal decline, stakeholders benefit from sustained demand.

Youth participation has become increasingly visible in this evolving landscape. Winter created opportunities for snow sport instructors, guides, and hospitality workers. Spring opens avenues for event organizers, photographers, travel bloggers, and cultural performers. Digital promotion through social media platforms has amplified visibility, drawing domestic travelers inspired by viral images of snow-clad mountains and flower-lined terraces.

The synergy between Gulmarg's winter rush and Srinagar's spring bloom reflects a broader strategic shift—positioning Kashmir as a four-season destination. While winter tourism remains geographically concentrated in snow-reliable areas, spring attractions distribute visitor traffic more evenly. Scenic destinations such as Yousmarg and Doodhpathri are reopening in preparation for increased footfall, ensuring that economic benefits extend beyond traditional hotspots.

However, the remarkable surge also underscores infrastructure challenges. Increased tourist numbers exert pressure on roads, parking facilities, sanitation systems, and public amenities. Traffic congestion near popular sites often tests administrative preparedness. Lessons from managing winter crowds in Gulmarg must inform spring planning in Srinagar. Coordinated traffic regulation, designated parking zones, improved public transport access, and strict crowd management protocols are essential to maintain visitor satisfaction.

Environmental sustainability is equally critical. The fragile ecosystems of alpine meadows and garden landscapes require vigilant stewardship. Tulip cultivation demands scientific precision in irrigation, soil management, and climate adaptation. As global weather patterns shift, maintaining synchronized bloom cycles becomes increasingly complex. Responsible tourism practices—waste segregation, plastic reduction, and eco-friendly transport—must accompany growth to preserve Kashmir's natural allure.

Beyond economics and infrastructure, the tourism revival carries profound social significance. Bustling gardens, illuminated markets, and lively promenades generate a renewed sense of vibrancy. Cultural exchanges between visitors and residents foster mutual appreciation. Culinary tourism flourishes as restaurants showcase traditional Wazwan cuisine alongside modern fusion offerings. Craft exhibitions and local fairs strengthen artisan networks.

Importantly, the evolving tourism cycle

reshapes perception. For decades, narratives surrounding Kashmir often overshadowed its scenic grandeur. Sustained seasonal tourism projects a different story of resilience, hospitality, and cultural richness. Each successful season reinforces investor confidence and encourages further infrastructural modernization.

Advance bookings for the tulip season indicate that momentum remains strong. Travel agencies report robust interest in spring packages, while hoteliers anticipate high occupancy levels. The continuity from snow to blossoms suggests a maturing tourism ecosystem capable of weathering seasonal fluctuations.

Looking ahead, strategic planning must consolidate these gains. Integrated travel circuits linking Gulmarg's winter sports with Srinagar's spring gardens and summer destinations such as Pahalgam and Sonamarg can create immersive multi-season experiences. Investment in skill development for hospitality professionals, expansion of homestay networks, and improved digital marketing campaigns can further strengthen competitiveness.

In essence, the blooming tulips and almond blossoms symbolize more than seasonal beauty—they represent economic resilience and strategic foresight. Gulmarg's winter rush proved that Kashmir can attract visitors even during traditionally off-peak months. The spring bloom confirms that this interest is not episodic but sustained.

As snow melts into flowing streams and blossoms paint the Valley in pastel hues, Jammu and Kashmir stands poised at a pivotal juncture. The record winter influx has redefined expectations; the vibrant spring ensures continuity. If managed wisely, 2026 may well mark the consolidation of Kashmir's identity as a truly year-round destination—where every season tells its own story, yet together they compose a powerful narrative of revival, renewal, and enduring charm.

(The author is a senior analyst)

## Discovery of new civilisation on the bank of River Vaigai

■ ANANYA SEN

For decades, history textbooks taught that after the decline of the Indus Valley Civilization, the "Second Urbanization" of India occurred primarily in the Gangetic plains of the North around 600 BCE. However, Keeladi village, tucked away along the banks of the Vaigai River in Tamil Nadu, has brought to light evidence that challenges this long-held narrative. The story began in 2014 when excavations led by archaeologist Amarnath Ramakrishna of the Archaeological Survey of India (ASI) revealed an entire urban settlement rather than just scattered artifacts. This discovery sparked a deep curiosity, making it clear that ancient India was not merely a collection of rural tribes, but a highly urbanized, technologically advanced, and industrially developed region.

The discovery of brick structures, luxury items, and advanced water management systems proves that the people of the Vaigai Valley lived a life of comfort and complexity long before the common era. Unlike simple rural settlements, Keeladi was a planned city. Archaeologists found homes built with high-quality burnt bricks and terracotta pipelines for drainage. Researchers have uncovered evidence of a large-scale weaving industry and glass bead manufacturing, showing that this was a massive industrial hub. This high standard of engineering and complex social structure proves that what we call "advanced" today was already being lived by our ancestors. It is a humbling realization that we are perhaps just at the beginning of our own development compared to their ancient wisdom. It makes one wonder if what we have discovered so far is only 10% or 15% of our true history. The more we discover, the more we find



ourselves lost in the imagination of how sophisticated our ancestors truly were.

One of the most significant finds at Keeladi is the evidence of widespread literacy. Archaeologists discovered numerous pottery shards inscribed with the "Tamil-Brahmi" script. Scientific carbon dating has pushed the date of these findings back to at least 580 BCE, confirming that the people of the Vaigai were reading and writing centuries earlier than previously thought. Because these scripts—featuring personal names like Aathan, Uthiran, and Kuviran—were scratched into everyday household pottery after they were fired, it suggests that literacy was not reserved for a priestly or elite class. Ordinary citizens, such as potters and traders, were literate enough to mark their own belongings. This level of education among common people speaks to a highly evolved society that valued the mind as much as the craft. The most exciting aspect of Keeladi is its potential link to the Indus Valley Civilization. Many of the

"graffiti marks" found on Keeladi pottery bear a striking resemblance with some scholars noting a high correlation to the ancient Indus script. While a direct linguistic link is still being debated due to the time gap between the two civilizations, the similarities suggest a cultural continuity. Keeladi could be the evidence showing how the urban spirit of the Indus survived and evolved in the deep South. It suggests that the sophisticated urbanization we see in the North was mirrored, and perhaps even preceded, by the people of the Vaigai River. Keeladi is not just digging up the soil; it is uncovering a lost chapter of our identity. It serves as a powerful reminder that to understand our future, we must be curious enough to unearth our true past. Our history is not lost; it is simply waiting for us to look deeper into the earth to find the truth of who we really are.

(The writer is Student of Mass Communication and New Media at Central University of Jammu)

## Empowering a Science-Aware Society

■ DR. VINOD CHANDRASHEKHAR DIXIT

National Science Day, celebrated annually in India on February 28th, commemorates Sir C.V. Raman's groundbreaking discovery of the "Raman Effect" in 1928. This day highlights the importance of science in daily life, promotes scientific temper, and inspires youth to pursue scientific careers. As we celebrate Science Day on February 28, 2026, let us honour scientists, nurture curiosity in young minds, and collectively work towards a sustainable, innovative, and knowledge-driven future. Albert Einstein quotes "The important thing is not to stop questioning. Curiosity has its own reason for existence."

The significance of National Science Day extends beyond mere celebration. It serves as a reminder that science is the backbone of modern society, improving lives in countless ways, from providing clean water to enabling space exploration. The day is marked by nationwide science exhibitions, debates, and competitions, focusing on sustainable development and technological innovation to enhance society. The theme for National Science Day 2026 emphasizes sustainability, innovation, and responsible use of technology for future generations. This theme underscores the need for scientific advancements that prioritize the well-being of our planet and its inhabitants. Dr. APJ Abdul Kalam said "Science is not only a discipline of reason but also a way of life."

National Science Day plays a crucial role in shaping a science-aware society. By fostering a culture of scientific curiosity and supporting research, India continues to build on the legacy of scientists like C.V. Raman to ensure a brighter, technologically advanced future. Some key objectives of National Science Day include— Promoting scientific temper and critical thinking, Encouraging students to pursue careers in science, technology, engineering, medicine, defence research, and space science, Showcasing India's progress in ISRO missions, medical research, digital technology, and sustainable innovation, Instilling curiosity and a rational approach towards problem-solving and Fostering a culture that values evidence-based reasoning

The discovery of the Raman Effect by Sir C.V. Raman is a testament to the power of scientific inquiry. Using a spectrograph he developed, Raman and his student K.S. Krishnan discovered that when light travels through a transparent medium, the deflected light changes its frequency and wavelength. This phenomenon, now known as the Raman Effect, earned Raman the Nobel Prize in Physics in 1930.

As we look to the future, it is clear that science and innovation will play an increasingly important role in addressing global challenges. National Science Day serves as a reminder that scientific innovation is key to national progress and solving global challenges. Dr. Har Gobind Khorana said "The pursuit of science is a never-ending journey, and every discovery



leads to new questions and new possibilities."

In conclusion, National Science Day is a celebration of the power of science and innovation to transform lives and shape the future. As we commemorate this day, let us reaffirm our commitment to promoting scientific temper, encouraging young minds, and working towards a brighter, more sustainable future for all.